

BLUE EARTH COUNTY HIGHWAY DEPARTMENT  
35 MAP DRIVE, MANKATO, MINNESOTA 56001

\*\*\*\*\*PROPOSAL\*\*\*\*\*

FOR HIGHWAY CONSTRUCTION  
AND MAINTENANCE PROJECTS WITH  
BIDS RECEIVED UNTIL 1:30 O'CLOCK P.M. ON May 6, 2011

PROPOSAL OF

\_\_\_\_\_  
(NAME OF FIRM)

\_\_\_\_\_  
(ADDRESS)

\_\_\_\_\_  
(AREA CODE) TELEPHONE NUMBER

TO FURNISH AND DELIVER ALL MATERIALS AND TO PERFORM ALL WORK IN ACCORDANCE WITH THE CONTRACT, THE PLANS AND THE APPROVED DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 2005 EDITION, EXCEPT AS STATED OTHERWISE IN THE SPECIAL PROVISIONS WHICH ARE PART OF THIS PROPOSAL, FOR

STATE PROJECT NO. **S.A.P. 07-606-13, 07-614-10, 07-617-15, & County Project 8140**

MINNESOTA PROJECT NO.

LOCATION: CSAH 6, CSAH 14, CSAH 17, CR 114

TYPE OF WORK: Bituminous Overlays & Aggregate Shouldering


LENGTH: See Plans

STARTING DATE: See Special Provisions

COMPLETION DATE: See Special Provisions

NOTICE TO BIDDERS: In submitting a bid, you must return this complete proposal. You must initial changes made in the Schedule of Prices in the Proposal and acknowledge addenda on the back cover sheet.

I certify that this Proposal was prepared by me or under my direct supervision, and that I am a licensed professional engineer under the laws of the State of Minnesota.

  
\_\_\_\_\_  
License Number 14720 Date: 14 Mar 11

\*\*\*\*\*

BID RIGGING IS A SERIOUS CRIME. IF YOU HAVE ANY INFORMATION CONCERNING COLLUSIVE BIDDING, EVEN A REQUEST TO SUBMIT A COMPLIMENTARY BID, PLEASE CALL THE MINNESOTA ATTORNEY GENERAL'S OFFICE AT TELE. NO. 651-296-1796



**To Local Agency (Board of Commissioners/City Council):**

According to the advertisement of Local Agency inviting proposals for the improvement of the section of highway hereinbefore named, and in conformity with the Contract, Plans, Specifications and Special Provisions pertaining thereto, all on file in the office of the (Auditor/Clerk) of Local Agency:

(I)(We) hereby certify that (I am)(we are) the only person(s) interested in this proposal as principal(s); that this proposal is made and submitted without fraud or collusion with any other person, firm or corporation at all; that an examination has been made of the site of the work and the Contract form, with the Plans, Specifications and Special Provisions for the improvement.

(I)(We) understand that the quantities of work shown herein are approximate only and are subject to increase or decrease; that all quantities of work, whether increased or decreased within the limits specified in Mn/DOT 1903, are to be done at the unit prices shown on the attached schedule; that, at the time of opening bids, totals only will be read, but that comparison of bids will be based on the correct summation of item totals obtained from the unit prices bid, as provided in Mn/DOT 1301.

(I)(We) propose to furnish all necessary machinery, equipment, tools, labor and other means of construction and to furnish all materials specified, in the manner and at the time prescribed, all according to the terms of the Contract and Plans, Specifications, and the Special Provisions forming a part of this.

(I)(We) further propose to do all Extra Work that may be required to complete the contemplated improvement, at unit prices or lump sums to be agreed upon in writing before starting such work, or if such prices or sums cannot be agreed upon, to do such work on a Force Account basis, as provided in Mn/DOT 1904.

(I)(We) further propose to execute the form of Contract within 10 days after receiving written notice of award, as provided in Mn/DOT 1306.

(I)(We) further propose to furnish a payment bond equal to the Contract amount, and a performance bond equal to the Contract amount, with the aggregate liability of the bond(s) equal to twice the full amount of the Contract if the contract is less than or equal to five million dollars (\$5,000,000.00), or if the contract is in excess of five million dollars (\$5,000,000.00) the aggregate liability shall be equal to the amount of the contract, as security for the construction and completion of the improvement according to the Plans, Specifications and Special Provisions as provided in Mn/DOT 1305.

(I)(We) further propose to do all work according to the Plans, Specifications and Special Provisions, and to renew or repair any work that may be rejected due to defective materials or workmanship, before completion and acceptance of the Project by Local Agency.

(I)(We) agree to all provisions of Minnesota Statutes, Section 181.59.

(I)(We) further propose to begin work and to prosecute and complete the same according to the time schedule set forth in the Special Provisions for the improvement.

(I)(We) assign to Local Agency all claims for overcharges as to goods and materials purchased in connection with this Project resulting from antitrust violations that arise under the antitrust laws of the United States and the antitrust laws of the State of Minnesota. This clause also applies to subcontractors and first tier suppliers under this Contract.



## **NOTICE TO ALL BIDDERS**

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.



**NOTICE TO BIDDERS**  
**SUSPENSIONS/DEBARMENTS**

February 10, 2011  
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**DEPARTMENT OF TRANSPORTATION**

**NOTICE OF SUSPENSION**

**NOTICE IS HEREBY GIVEN** that the Department of Transportation (Mn/DOT) has ordered that the following vendors be suspended effective December 28, 2009, until final disposition of the hearing or hearing appeal:

Riley Bros. Companies Inc. and its affiliates, Morris MN  
Riley Bros. Construction Inc. and its affiliates, Morris MN  
Riley Bros. Properties, LLC, and its affiliates, Morris MN  
Riley Bros. Utilities, Inc. dba/Chris Riley Utilities, Inc. and its affiliates, Morris MN

**NOTICE IS HEREBY GIVEN** that the Department of Transportation (Mn/DOT) has ordered that the following vendors be suspended effective February 10, 2011, until final disposition of the hearing or hearing appeal:

Philip Joseph Franklin  
Franklin Drywall Inc. and its affiliates, Little Canada, MN  
Master Drywall Inc. and its affiliates, Little Canada, MN

**NOTICE OF DEBARMENT**

**NOTICE IS HEREBY GIVEN** that the Department of Transportation (Mn/DOT) has ordered that the following vendors be debarred for a period of three (3) years effective February 24, 2010 until February 24, 2013:

Joseph Edward Riley, Morris, MN  
John Thomas Riley, Morris, MN

Minnesota Statutes, Section 161.315, prohibits the Commissioner, counties, towns or home rule or statutory cities from awarding or approving the award of a contract for goods or services to a person who is suspended or debarred; including

- 1) any contract under which a debarred or suspended person will serve as a subcontractor or material supplier,
- 2) any business or affiliate which the debarred or suspended person exercises substantial influence or control, and
- 3) any business or entity which is sold or transferred by a debarred person remains ineligible during the period of the seller's or transfer's debarment.

**NOTICE TO BIDDERS**  
**SUSPENSIONS/DEBARMENTS**

February 10, 2011  
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**DEPARTMENT OF ADMINISTRATION**

The Department of Administration in accordance with Minnesota Rules 1230.1150 has debarred and disqualified the following persons and businesses from entering into or receiving a State of Minnesota contract.

<b>NAME</b>	<b>DATE OF DEBARMENT</b>
Joseph Edward Riley East 7 <sup>th</sup> Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
John Thomas Riley East 7 <sup>th</sup> Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Riley Bros. Construction, Inc. East 7 <sup>th</sup> Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Riley Bros. Companies Inc. East 7 <sup>th</sup> Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Polyphase Electric Company 2515 West Superior Street Duluth, MN 55816-0151	May 5, 2010 Through May 5, 2012
Frances Harkonen 2515 West Superior Street Duluth, MN 55816-0151	May 5, 2010 Through May 5, 2012

Minnesota Rules Part 1230.1150, Subpart 6 requires the Materials Management Division to maintain a master list of all suspensions and debarments. The master list must retain all information concerning suspensions and debarments as a public record for at least three years following the end of a suspension or debarment. This list can be found at: <http://www.mmd.admin.state.mn.us/debarredreport.asp>

# STATE FUNDED CONSTRUCTION CONTRACTS

## SPECIAL PROVISIONS DIVISION A - LABOR

### April 7, 2006

#### I. PREAMBLE

It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.<sup>1</sup>

Therefore, the department shall administer this contract pursuant to the **State of Minnesota Statutes and Rules, MN/DOT's Standard Specifications for Construction, MN/DOT's Contract Administration Manual, MN/DOT's State Aid Manual** and applicable federal labor regulations.

#### II. DEFINITIONS<sup>2</sup>

- A. **Contract**: The written agreement between the contracting authority and the prime contractor setting forth their obligations, including, but not limited to, the performance of the work, the furnishing of labor and materials, the basis of payment, and other requirements contained in the contract documents.
- B. **Contracting Authority**: The political subdivision, governmental body, board, department, commission, or officer making the award and execution of contract as the party of the first part.
- C. **Contractor**: The term "contractor" in these provisions shall include the prime contractor, subcontractor, agent, or other person doing or contracting to do all or part of the work under this contract.<sup>3</sup>
- D. **Department**: The Department of Transportation of the State of Minnesota, or the political subdivision, governmental body, board, commission, office, department, division, or agency constituted for administration of the contract work within its jurisdiction.
- E. **First Tier Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor sublets part of the contract.
- F. **Independent Truck Owner/Operator (ITO)**: An individual, partnership, or principal stockholder of a corporation who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity that provides construction services to a public works project.<sup>4</sup>
- G. **Laborer or Mechanic**: A worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.<sup>5</sup>
- H. **Plan**: The plan, profiles, typical cross-sections, and supplemental drawings that show the locations, character, dimensions, and details of the work to be done.
- I. **Prime Contractor**: The individual, firm, corporation, or other entity contracting for and undertaking prosecution of the prescribed work; the party of the second part to the contract, acting directly or through a duly authorized representative.
- J. **Project**: The specific section of the highway, the location, or the type of work together with all appurtenances and construction to be performed under the contract.

<sup>1</sup> Minnesota Statute 177.41

<sup>2</sup> MN/DOT Standard Specifications for Construction, Section 1103

<sup>3</sup> Minnesota Statute 177.44, Subdivision 1

<sup>4</sup> Minnesota Rules 5200.1106, Subpart 7(A)

<sup>5</sup> Minnesota Rules 5200.1106, Subpart 5(A)

- K. **Second Tier Subcontractor**: An individual, firm, corporation, or other entity to which a first tier subcontractor sublets part of the contract.
- L. **Special Provisions**: Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.
- M. **Specifications**: A general term applied to all directions, provisions, and requirements pertaining to performance of the work.
- N. **Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor or subcontractor sublets part of the contract.
- O. **Substantially In Place**: Mineral aggregate is deposited on the project site directly or through spreaders where it can be spread from or compacted at the location where it was deposited.<sup>6</sup>
- P. **Trucking Broker**: An individual or business entity, the activities of which include, but are not limited to: contracting to provide trucking services in the construction industry to users of such services, contracting to obtain such services from providers of trucking services, dispatching the providers of the services to do work as required by the users of the services, receiving payment from the users in consideration of the trucking services provided and making payment to the providers for the services.<sup>7</sup>
- Q. **Trucking Firm/Multiple Truck Owner (MTO)**: Any business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects.<sup>8</sup>
- R. **Work**: The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract upon the contractor. Also used to indicate the construction required or completed by the contractor.

### III. SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT

- A. These provisions shall apply to this contract, which is funded in whole or part with state funds.<sup>9</sup>
- B. These provisions shall apply to the prime contractor and all subcontractors contracting to do all or part of the work under this contract.<sup>10</sup>
- C. The provisions established in this document do not necessarily represent all federal, state, and local laws, ordinances, rules and regulations. It is the responsibility of the prime contractor to inform itself and all subcontractors about other regulations that may be applicable to this contract.
- D. The prime contractor is responsible to ensure that each subcontractor performing work under this contract receives copies of all required contract provisions. These provisions shall be incorporated into written subcontracts and must be displayed on the poster board.<sup>11</sup>
- E. The department shall administer this contract in accordance with all applicable state statutes and rules,<sup>12</sup> along with the plans, specifications and provisions, which are incorporated into and found elsewhere in this contract.
- F. An unpublished decision from the Minnesota Court of Appeals affirms the authority of the Minnesota Commissioner of Transportation to enforce the Minnesota Prevailing Wage Law on a case-by-case basis.<sup>13</sup>

<sup>6</sup> Minnesota Rules 5200.1106, Subpart 5(C)

<sup>7</sup> Minnesota Rules 5200.1106, Subpart 7(C)

<sup>8</sup> Minnesota Rules 5200.1106, Subpart 7(B)

<sup>9</sup> Minnesota Statute 177.41

<sup>10</sup> Minnesota Statute 177.44, Subdivision 1

<sup>11</sup> Minnesota Statute 177.44, Subdivision 5

<sup>12</sup> Minnesota Rules 8820.3000, Subpart 2

<sup>13</sup> Minnesota Court of Appeals Case Number: C6-97-1582

G. For additional information refer to: [www.dot.state.mn.us/const/labor/](http://www.dot.state.mn.us/const/labor/).

#### IV. PAYROLLS AND STATEMENTS

A. All contractors shall submit a payroll statement to the department.<sup>14</sup> The statement shall be submitted based on the contractor's payment schedule. If a contractor pays its employees weekly, a payroll statement shall be submitted weekly. If a contractor pays its employees biweekly, a payroll statement shall be submitted biweekly.<sup>15</sup> All contractors shall pay its employees at least once every 15 days on a date designated in advance by the employer.<sup>16</sup> Each statement submitted shall include all employees that performed work under this contract and provide at a minimum the following information:<sup>17</sup>

1. Contractor's name, address, and telephone number.
2. State project number.
3. Payroll report number.
4. Project location.
5. Workweek ending date.
6. Name, social security number, and home address for each employee.
7. Labor classification(s) and/or three-digit code for each employee.
8. Hourly straight time and overtime wage rates paid to each employee.
9. Daily and weekly hours worked in each labor classification, including overtime hours for each employee.
10. Authorized legal deductions for each employee.
11. Project gross amount, weekly gross amount and net wages paid to each employee.

B. Payroll records may be submitted in any form provided it includes all the information contained in **Subpart A (1 - 11)** of this section. However, contractors needing a payroll form may utilize the "front side" of the **U.S. Department of Labor's, WH-347 - Payroll Form**. This form is available by visiting the Labor Compliance website.<sup>18</sup>

C. All payroll records must be accompanied with a completed and signed **MN/DOT, 21658 - Statement of Compliance Form**.<sup>19</sup>

D. The prime contractor is responsible for assuring that its payroll records and those of all subcontractors include all employees that performed work under this contract and accurately reflect the hours worked, regular and overtime rates of pay and classification of work performed.<sup>20</sup>

E. The prime contractor is responsible to maintain all certified payroll records, including those of all subcontractors, throughout the course of a construction project and retain all records for a period of three years after the final contract voucher has been issued.<sup>21</sup>

F. At the end of each pay period, each contractor shall provide every employee, in writing, an accurate, detailed earnings statement.<sup>22</sup>

<sup>14</sup> Minnesota Statute 177.44, Subdivision 7

<sup>15</sup> Mn/DOT Contract Administration Manual, Section .320

<sup>16</sup> Minnesota Statute 181.10

<sup>17</sup> Minnesota Rules 5200.1106, Subpart 10 and Minnesota Statute 177.30

<sup>18</sup> [www.dot.state.mn.us/const/labor/](http://www.dot.state.mn.us/const/labor/)

<sup>19</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>20</sup> Minnesota Statute 177.30(1)(2)(3)(4)

<sup>21</sup> Minnesota Statute 177.30(4)

<sup>22</sup> Minnesota Statute 181.032

- G. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of payroll records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.<sup>23</sup>
- H. At the department's discretion, the project engineer may administer the submission of payroll records according to MN/DOT's Payroll Maintenance Program. The guidelines for the implementation and administration of this program are outlined in the **MN/DOT Contract Administration Manual, Section A(4)(d)**.
- I. If, after written notice, the prime contractor fails to submit its payroll reports and certification forms and those of any subcontractor, the department may implement the actions prescribed in section **XVI (NON-COMPLIANCE AND ENFORCEMENT)**.

## V. WAGE RATES

- A. The prime contractor is responsible to ensure that its workers and those of all subcontractors are compensated according to the MN/DLI state prevailing wage determination(s) incorporated into and found elsewhere in this contract. All contractors shall pay each worker the required minimum total hourly wage rate for all hours worked on the project and for the appropriate classification of labor.
  - 1. State highway and heavy wage determinations are issued for ten separate regions throughout the state of Minnesota. If the contract work is located in more than one region, the applicable wage decision for each region shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state highway and heavy wage determinations, there shall be only one standard of hours of labor and wage rates.<sup>24</sup>
  - 2. State commercial wage determinations are issued for each county throughout the state of Minnesota. If the contract work is located in more than one county, the applicable wage determination for each county shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state commercial wage determinations, there shall be only one standard of hours of labor and wage rates.<sup>25</sup>
- B. Wage rates listed in the state wage determination(s) contain two components: the hourly basic rate and the fringe rate; together they equal the total prevailing wage rate. A contractor shall compensate a worker at a minimum, a combination of cash and fringe benefits equaling the total prevailing wage rate.<sup>26</sup>
- C. The applicable certified wage decision(s) incorporated into and found elsewhere in this contract remain in effect for the life of this contract. The wage decision(s) do not necessarily represent the workforce that can be obtained at the rates certified by the MN/DLI. It is the responsibility of the prime contractor and any subcontractor to inform themselves about local labor conditions and prospective changes or adjustments to the wage rates. No increase in the contract price shall be allowed or authorized due to wage rates that exceed those incorporated into this contract.
- D. A contractor shall not reduce a worker's private, regular rate of pay when the wage rate certified by the MN/DLI is less than the worker's normal hourly wage.<sup>27</sup>
- E. From the time a worker is required to report for duty at the project site until the worker is allowed to leave the site, no deductions shall be made from the worker's hours for any delays of less than twenty consecutive minutes.<sup>28</sup>

<sup>23</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

<sup>24</sup> Minnesota Statute 177.44, Subdivision 4

<sup>25</sup> Minnesota Statute 177.44, Subdivision 4

<sup>26</sup> Minnesota Statute 177.42, Subdivision 6

<sup>27</sup> Minnesota Statute 181.03, Subdivision 1(2)

<sup>28</sup> Minnesota Rules 5200.0120, Subpart 1



- F. In situations where a delay may exceed twenty consecutive minutes and the contractor requires a worker to remain on the premises or so close to the premises that the worker cannot use the time effectively for the worker's own purposes, the worker is considered "on-call"<sup>29</sup> and shall be compensated in accordance with **Subpart B** of this section, unless the worker is allowed or required to leave the project site.
- G. A contractor making payment to an employee, laborer, mechanic, worker, or truck owner-operator shall not accept a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.<sup>30</sup>
- H. Any employee who knowingly permits a contractor to pay less than the total prevailing wage or gives up any part of the compensation to which the employee is entitled may be subject to penalties.<sup>31</sup>

## VI. BONA FIDE FRINGE BENEFITS

- A. A "funded" fringe benefit plan is one that allows the contractor to make irrevocable contributions on behalf of an employee to a financially responsible trustee, third person, fund, plan or program, without prior approval from the U.S. Department of Labor. Types of "funded" fringe benefits may include, but are not limited to: pension, health and life insurance.<sup>32</sup>
- B. An "unfunded" fringe benefit plan or program is one that allows the contractor to furnish an in-house benefit on behalf of an employee. The cost to provide the benefit is funded from the contractor's general assets rather than funded by contributions made to a trustee, third person, fund, plan or program. Types of "unfunded" fringe benefits may include, but are not limited to: holiday plans, vacation plans and sick plans.<sup>33</sup>
- C. Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:<sup>34</sup>
  - 1. include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;
  - 2. are legally enforceable;
  - 3. have been communicated in writing to the employee; and
  - 4. are made available to the employee once he/she has met all eligibility requirements.
- D. No credit shall be allowed for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.<sup>35</sup>
- E. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of fringe benefit records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.<sup>36</sup>
- F. In addition to the requirements set forth in **Subpart C** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state fringe benefit regulations that may be applicable to this contract.

<sup>29</sup> Minnesota Rules 5200.0120, Subpart 2

<sup>30</sup> Minnesota Rules 5200.1106, Subpart 6

<sup>31</sup> Minnesota Statute 177.44, Subdivision 6

<sup>32</sup> 29 CFR Parts 5.26 and 5.27

<sup>33</sup> 29 CFR Part 5.28

<sup>34</sup> 29 CFR Part 5.23

<sup>35</sup> 29 CFR Part 5.29(f)

<sup>36</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

- G. Contractors shall submit a completed and signed **MN/DOT, 21658 - Statement of Compliance Form**, identifying any fringe contributions made on behalf of a worker.<sup>37</sup> The form must be submitted in accordance with section **IV (PAYROLLS AND STATEMENTS), Subparts A and C**.
- H. Pursuant with *Minnesota Statute 181.74, Subdivision 1*, a contractor that is obligated to deposit fringe benefit contributions on behalf of its employees into a financially responsible trustee, third person, fund, plan, or program and fails to make timely contributions may be guilty of a gross misdemeanor. A contractor found in violation of the above-mentioned statute shall compel the department to take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT)**.

## VII. OVERTIME

- A. A contractor shall not permit or require a worker to work longer than the prevailing hours of labor unless the worker is paid for all hours in excess of the prevailing hours at a rate of at least 1-1/2 times the hourly basic hourly rate of pay.<sup>38</sup> The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.<sup>39</sup>
- B. In addition to the requirements set forth in **Subpart A** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state overtime regulations that may be applicable to this contract.

## VIII. LABOR CLASSIFICATIONS

All contractors shall refer to the state wage determination(s) incorporated into and found elsewhere in this contract or the Master Job Classification List<sup>40</sup> to obtain an applicable job classification. If a contractor cannot determine an appropriate job classification, state law requires that the worker be assigned a job classification that is the "same or most similar".<sup>41</sup> Contractors needing clarification shall contact MN/DLI or the MN/DOT Labor Compliance Unit at (651) 296-6503.

## IX. INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS AND FOREMAN

- A. An independent contractor performing work as a laborer or mechanic is subject to the contract prevailing wage requirements<sup>42</sup> for the classification of work performed and shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**. In order to ensure compliance, the department may examine the subcontract agreement to determine if the bid price submitted covers the applicable prevailing wage rate for the number of hours worked, along with other records, deemed appropriate by the department.<sup>43</sup>
- B. Pursuant with state regulations, owners, supervisors and foreman performing work under the contract<sup>44</sup> shall be compensated in accordance with section **V (WAGE RATES)**. Furthermore, the prime contractor and any subcontractor shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**.

<sup>37</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>38</sup> Minnesota Statute 177.44, Subdivision 1

<sup>39</sup> Minnesota Statute 177.42, Subdivision 4

<sup>40</sup> Minnesota Rules 5200.1100

<sup>41</sup> Minnesota Statute 177.44, Subdivision 1

<sup>42</sup> 29 CFR Part 5.2(o) and Minnesota Statute 177.41

<sup>43</sup> Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

<sup>44</sup> Minnesota Statute 177.44, Subdivision 1

**X. APPRENTICES, TRAINEES AND HELPERS**

- A. An apprentice is not subject to the state wage decision(s) incorporated into and found elsewhere in this contract, provided the contractor can demonstrate compliance with **Subparts (1 - 4)** of this section.<sup>45</sup>
  - 1. The apprentice is performing the work of his/her trade.
  - 2. The apprentice is registered with the U.S. DOL Bureau of Apprenticeship and Training or MN/DLI Division of Voluntary Apprenticeship.
  - 3. The apprentice is compensated according to the rate specified in the program for the level of progress.
  - 4. The ratio of apprentices to journeyman workers on the project is not greater than the ratio permitted for the contractor's entire work force under the registered program.<sup>46</sup>
- B. If a contractor fails to demonstrate compliance with the terms established in **Subpart A (1 - 4)** of this section, the contractor shall compensate the worker not less than the applicable total prevailing wage rate for the actual work performed.<sup>47</sup>
- C. A trainee and a helper are not exempt under state law; the contractor shall assign the trainee or helper a job classification that is the "same or most similar"<sup>48</sup> and compensate the trainee or helper for the actual work performed regardless of the trainee's or helper's skill level.

**XI. SUBCONTRACTING PART OF THIS CONTRACT<sup>49</sup>**

- A. If the prime contractor intends to sublet any portion of this contract, it shall complete and submit a **MN/DOT, TP-21834, Request To Sublet Form** to the project engineer 10 days prior to the first day of work for any subcontractor.
- B. The prime contractor shall not subcontract any portion of this contract without prior written consent from the project engineer.
- C. The prime contractor's organization shall perform work amounting to not less than 40 percent of the total original contract cost. However, contracts with Disadvantaged Business Enterprise (DBE) or Targeted Group Business (TGB) established goals, or both, the contractor's organization shall perform work amounting to not less than 30 percent of the total original contract cost.
- D. A first tier subcontractor shall not subcontract any portion of its work under this contract unless approved by the prime contractor and the project engineer. In addition, a first tier subcontractor may only subcontract up to 50% of its original subcontract.
- E. A second tier subcontractor shall not subcontract any portion of its work under this contract.
- F. Written consent to subcontract any portion of this contract does not relieve the prime contractor of liabilities and obligations under the contract and bonds.
- G. Contractors shall not subcontract with or purchase materials or services from a debarred or suspended person.<sup>50</sup>

**XII. POSTER BOARDS**

- A. The prime contractor shall construct and display a poster board, which contains all required posters, is complete, accurate, legible and accessible to all workers from the first day of work

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<sup>45</sup> Minnesota Rules 5200.1070

<sup>46</sup> MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director

<sup>47</sup> Minnesota Rules 5200.1070, Subpart 3

<sup>48</sup> Minnesota Statute 177.44, Subdivision 1

<sup>49</sup> MN/DOT Standard Specifications for Construction, Section 1801

<sup>50</sup> Minnesota Statute 161.315, Subdivision 3(3)

until the project is 100 percent complete.<sup>51</sup> The prime contractor is not allowed to place a poster board at an off-site location.

- B. The prime contractor can obtain the required posters by contacting MN/DOT at (651) 366-3091. The prime contractor will need to furnish its name, mailing address, the type of posters (state-aid) and the quantity needed.
- C. Refer to the poster board section of the Labor Compliance website to obtain applicable contact information for each poster. The link to the website can be found in section **III (SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT), Subpart G** of these provisions.

### **XIII. EMPLOYEE INTERVIEWS**

At any time the prime contractor shall permit representatives from MN/DLI or the Department to interview its workers and those of any subcontractor during working hours on the project.<sup>52</sup>

### **XIV. TRUCKING / OFF-SITE FACILITIES**

- A. The prime contractor is responsible to ensure that its workers and those of all subcontractors, are compensated in accordance with the state wage determination(s) incorporated into and found elsewhere in this contract for the following work duties:
  - 1. The processing or manufacturing of material, including the hauling of material to and from a prime contractor's material operation that is not a separate commercial establishment.<sup>53</sup>
  - 2. The processing or manufacturing of material, including the hauling of material to and from an off-site material operation that is not considered a commercial establishment.<sup>54</sup>
  - 3. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.<sup>55</sup>
  - 4. The delivery of materials from a non-commercial establishment to the project and the return haul.<sup>56</sup>
  - 5. The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.<sup>57</sup>
  - 6. The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.<sup>58</sup>
  - 7. The delivery of mineral aggregate materials from a commercial establishment, which is deposited "substantially in place" and the return haul, either empty or loaded.<sup>59</sup>
- B. The work duties prescribed in **Subpart A (1 - 7)** of this section do not represent all possible hauling activities and/or other work duties that may be performed under this contract. It is the responsibility of the prime contractor to inform itself and all subcontractors about other applicable job duties that may be subject to the contract labor provisions. Refer to the Labor Compliance website for additional information regarding trucking regulations.

<sup>51</sup> Minnesota Statute 177.44, Subdivision 5

<sup>52</sup> MN/DOT Standard Specifications for Construction, Section 1511

<sup>53</sup> ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2

<sup>54</sup> Minnesota Rules 5200.1106, Subpart 3B(2)

<sup>55</sup> Minnesota Rules 5200.1106, Subpart 3B(1)

<sup>56</sup> Minnesota Rules 5200.1106, Subpart 3B(2)

<sup>57</sup> Minnesota Rules 5200.1106, Subpart 3B(3)

<sup>58</sup> Minnesota Rules 5200.1106, Subpart 3B(4)

<sup>59</sup> Minnesota Rules 5200.1106, Subpart 3B(5)(6)

- C. A contractor acquiring trucking services from an ITO, MTO and/or Truck Broker to perform and/or provide "covered" hauling activities shall comply with the payment of the certified state truck rental rates,<sup>60</sup> which are incorporated into and found elsewhere in this contract.
- D. Each month, in which hauling activities were performed under this contract, the prime contractor and all subcontractors shall submit a **MN/DOT, TP-90550 - Month-End Trucking Report** and **MN/DOT, TP-90551 - Statement of Compliance Form**, along with each ITOs, MTOs and/or Truck Brokers reports to the department.<sup>61</sup> The specifications regarding the dates for submission can be found near the bottom of the **MN/DOT, TP-90551 - Statement of Compliance Form**.
- E. A Truck Broker contracting to provide trucking services in the construction industry may charge a reasonable broker fee to the provider of trucking services.<sup>62</sup> The prime contractor and any subcontractor contracting to receive trucking services shall not assess a broker fee.
- F. A contractor with employee truck drivers shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS)**; **V (WAGE RATES)**; **VI (FRINGE BENEFITS)**; **VII (OVERTIME)** and **VIII (LABOR CLASSIFICATIONS)**.
- G. If after written notice, the prime contractor fails to submit its month-end trucking reports and certification forms and those of any subcontractor, MTO and/or Truck Broker, the department may take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT)**.

## **XV. CHILD LABOR**

- A. Except as permitted under **Subpart B** of this section, no worker under the age of 18 is allowed to perform work on construction projects.<sup>63</sup>
- B. In accordance with state law, a worker under the age of 18, employed in a corporation totally owned by one or both parents that is supervised by the parent(s), may perform work on construction projects.<sup>64</sup> However, if this contractor is subject to the federal Fair Labor Standards Act, a worker under the age of 18 is not allowed to perform work in a hazardous occupation.<sup>65</sup>
- C. To protect the interests of the department, the project engineer may remove a worker that appears to be under the age of 18 from the construction project until the contractor or worker can demonstrate proof of age<sup>66</sup> and compliance with all applicable federal and/or state regulations.<sup>67</sup>

## **XVI. NON-COMPLIANCE AND ENFORCEMENT**

- A. The prime contractor shall be liable for any unpaid wages to its workers or those of any subcontractor, ITO, MTO and/or Truck Broker.<sup>68</sup>
- B. If it is determined that a contractor has violated the state prevailing wage law, or any portion of this contract, the department after written notice, may implement one or more of the following sanctions:
  - 1. Withhold or cause to be withheld from the prime contractor such amounts in considerations or assessments against the prime contractor, whether arising from this contract or other contract with the department.<sup>69</sup>

<sup>60</sup> Minnesota Rules 5200.1106, Subpart 1

<sup>61</sup> Minnesota Rules 5200.1106, Subpart 10

<sup>62</sup> Minnesota Rules 5200.1106, Subpart 7(C)

<sup>63</sup> Minnesota Rules 5200.0910, Subpart F

<sup>64</sup> Minnesota Rules 5200.0930, Subpart 4

<sup>65</sup> 29 CFR Part 570.2(a)(ii)

<sup>66</sup> Minnesota Statute 181A.06, Subdivision 4

<sup>67</sup> MN/DOT Standard Specifications for Construction, Section 1701

<sup>68</sup> MN/DOT Standard Specifications for Construction, Section 1801

<sup>69</sup> MN/DOT Standard Specifications for Construction, Section 1906

2. The department may reject a bid from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.<sup>70</sup>
3. The department may take the prosecution of the work out of the hands of the prime contractor, place the contractor in default and terminate this contract for failure to demonstrate compliance with these provisions.<sup>71</sup>
- C. Any contractor who violates the state prevailing wage law is guilty of a misdemeanor and may be fined not more than \$300 or imprisoned not more than 90 days or both. Each day that the violation continues is a separate offense.<sup>72</sup>
- D. All required documents and certification reports are legal documents; willful falsification of the documents may result in civil action and/or criminal prosecution<sup>73</sup> and may be grounds for debarment proceedings.<sup>74</sup>

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<sup>70</sup> Minnesota Statute 161.32, Subdivision 1(d)

<sup>71</sup> MN/DOT Standard Specifications for Construction, Section 1808

<sup>72</sup> Minnesota Statute 177.44, Subdivision 6

<sup>73</sup> Minnesota Statutes 16B, 161.315, Subdivision 2, 177.43, Subdivision 5 177.44, Subdivision 6, 609.63

<sup>74</sup> Minnesota Statute 161.315 and Minnesota Statute 609.63

## **NOTICE TO BIDDERS**

Minnesota Statutes that require prompt payment to subcontractors:

471.425 Prompt payment of local government bills.

Subd. 1. Definitions. For the purposes of this section, the following terms have the meanings here given them.

(d) "Municipality" means any home rule charter or statutory city, county, town, school district, political subdivision or agency of local government. "Municipality" means the metropolitan council or any board or agency created under chapter 473.

Subd. 4a. Prompt payment to subcontractors.

Each contract of a municipality must require the prime contractor to pay any subcontractor within ten days of the prime contractor's receipt of payment from the municipality for undisputed services provided by the subcontractor. The contract must require the prime contractor to pay interest of 1-1/2 percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of \$100 or more is \$10. For an unpaid balance of less than \$100, the prime contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

HIST: 1985 c 136 s 5; 1995 c 31 s 1





**MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY PREVAILING WAGES FOR STATE  
FUNDED CONSTRUCTION PROJECTS**



**THIS NOTICE MUST BE POSTED ON THE JOBSITE IN A CONSPICUOUS PLACE**

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**Construction Type: Highway and Heavy**

**Region Number: 07**

Counties within region:

- BLUE EARTH-07
- FARIBAULT-22
- LESUEUR-40
- NICOLLET-52
- SIBLEY-72
- WASECA-81

Effective: 2010-11-29

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate.

Violations should be reported to:

Department of Transportation  
Office of Construction  
Transportation Building MS650  
John Ireland Blvd  
St. Paul, MN 55155  
(651) 366-4209

Refer questions concerning the prevailing wage rates to:

Department of Labor and Industry  
Prevailing Wage Section  
443 Lafayette Road N  
St Paul, MN 55155  
(651) 284-5091  
[DLI.PrevWage@state.mn.us](mailto:DLI.PrevWage@state.mn.us)

**LABOR CODE AND CLASS**

<b>EFFECT DATE</b>	<b>BASIC RATE</b>	<b>FRINGE RATE</b>	<b>TOTAL RATE</b>
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101 LABORER, COMMON (GENERAL LABOR WORK)	2010-11-29	23.16	13.63	36.79
	2011-05-01	23.41	14.38	37.79
102 LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2010-11-29	23.16	13.63	36.79
	2011-05-01	23.41	14.38	37.79
103 LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2010-11-29	17.19	11.29	28.48
104 FLAG PERSON	2010-11-29	23.16	13.63	36.79
	2011-05-01	23.41	14.38	37.79
105 WATCH PERSON	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>			
106 BLASTER	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>			
107 PIPELAYER (WATER, SEWER AND GAS)	2010-11-29	25.16	13.63	38.79
	2011-05-01	25.41	14.38	39.79
108 TUNNEL MINER	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>			
109 UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2010-11-29	23.86	13.63	37.49
	2011-05-01	24.11	14.38	38.49
110 SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES	2010-11-29	26.25	11.69	37.94

NOT APPLY TO THE WORK PERFORMED ON A  
PREVAILING WAGE PROJECT BY A LAND SURVEYOR  
WHO IS LICENSED PURSUANT TO MINNESOTA  
STATUTES, SECTIONS 326.02 TO 326.15.

111	TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVVAGE@STATE.MN.US">DLI.PREVVAGE@STATE.MN.US</a>			
112	QUALITY CONTROL TESTER (FIELD AND COVERED OFF-SITE FACILITIES; TESTING OF AGGREGATE, ASPHALT, AND CONCRETE MATERIALS); LIMITED TO MN DOT HIGHWAY AND HEAVY CONSTRUCTION PROJECTS WHERE THE MN DOT HAS RETAINED QUALITY ASSURANCE PROFESSIONALS TO REVIEW AND INTERPRET THE RESULTS OF QUALITY CONTROL TESTERS. SERVICES PROVIDED BY THE CONTRACTOR.	2010-11-29	17.49	4.18	21.67
201	ARTICULATED HAULER	2010-11-29	28.36	15.85	44.21
		2011-05-01	28.36	16.85	45.21
202	BOOM TRUCK	2010-11-29	28.36	15.85	44.21
		2011-05-01	28.36	16.85	45.21
203	LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2010-11-29	19.00	0.00	19.00
204	OFF-ROAD TRUCK	2010-11-29	28.36	15.85	44.21
		2011-05-01	28.36	16.85	45.21
<b>GROUP 2</b>		2010-11-29	29.11	15.85	44.96
		2011-05-01	29.11	16.85	45.96
302	HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)				
303	CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)				
304	ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB (HIGHWAY AND HEAVY ONLY)				

305 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)

306 GRADER OR MOTOR PATROL (HIGHWAY AND HEAVY ONLY)

307 PILE DRIVING (HIGHWAY AND HEAVY ONLY)

308 TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)

**GROUP 3**

2010-11-29 28.66 15.85 44.51

2011-05-01 28.66 16.85 45.51

309 ASPHALT BITUMINOUS STABILIZER PLANT (HIGHWAY AND HEAVY ONLY)

310 CABLEWAY (HIGHWAY AND HEAVY ONLY)

311 CONCRETE MIXER, STATIONARY PLANT (HIGHWAY AND HEAVY ONLY)

312 DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)

313 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)

314 DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER (HIGHWAY AND HEAVY ONLY)

315 FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)

316 LOCOMOTIVE CRANE OPERATOR (HIGHWAY AND HEAVY ONLY)

317 MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)

318 MECHANIC . WELDER ON POWER EQUIPMENT (HIGHWAY AND HEAVY ONLY)

319 TRACTOR . BOOM TYPE (HIGHWAY AND HEAVY ONLY)

320 TANDEM SCRAPER (HIGHWAY AND HEAVY ONLY)

321 TRUCK CRANE . CRAWLER CRANE (HIGHWAY AND HEAVY ONLY)

322 TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)

**GROUP 4**

2010-11-29 28.36 15.85 44.21

2011-05-01 28.36 16.85 45.21

323 AIR TRACK ROCK DRILL (HIGHWAY AND HEAVY ONLY)

324 AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)

325 BACKFILLER OPERATOR (HIGHWAY AND HEAVY ONLY)

326 CONCRETE BATCH PLANT OPERATOR (HIGHWAY AND HEAVY ONLY)

327 BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER) (HIGHWAY AND HEAVY ONLY)

- 328 BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON) (HIGHWAY AND HEAVY ONLY)
- 329 BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)
- 330 CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS (HIGHWAY AND HEAVY ONLY)
- 331 CHIP HARVESTER AND TREE CUTTER (HIGHWAY AND HEAVY ONLY)
- 332 CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE (HIGHWAY AND HEAVY ONLY)
- 333 CONCRETE MIXER ON JOBSITE (HIGHWAY AND HEAVY ONLY)
- 334 CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)
- 335 CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT (HIGHWAY AND HEAVY ONLY)
- 336 CURB MACHINE (HIGHWAY AND HEAVY ONLY)
- 337 DIRECTIONAL BORING MACHINE (HIGHWAY AND HEAVY ONLY)
- 338 DOPE MACHINE (PIPELINE) (HIGHWAY AND HEAVY ONLY)
- 339 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL (HIGHWAY AND HEAVY ONLY)
- 340 DUAL TRACTOR (HIGHWAY AND HEAVY ONLY)
- 341 ELEVATING GRADER (HIGHWAY AND HEAVY ONLY)
- 342 FORK LIFT OR STRADDLE CARRIER (HIGHWAY AND HEAVY ONLY)
- 343 FORK LIFT OR LUMBER STACKER (HIGHWAY AND HEAVY ONLY)
- 344 FRONT END, SKID STEER OVER 1 TO 5 C YD
- 345 GPS REMOTE OPERATING OF EQUIPMENT (HIGHWAY AND HEAVY ONLY)
- 346 HOIST ENGINEER (POWER) (HIGHWAY AND HEAVY ONLY)
- 347 HYDRAULIC TREE PLANTER (HIGHWAY AND HEAVY ONLY)
- 348 LAUNCHER PERSON (TANKER PERSON OR PILOT LICENSE) (HIGHWAY AND HEAVY ONLY)
- 349 LOCOMOTIVE (HIGHWAY AND HEAVY ONLY)
- 350 MILLING, GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE (HIGHWAY AND HEAVY ONLY)
- 351 MULTIPLE MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES, GENERATORS, PUMPS (HIGHWAY AND HEAVY ONLY)
- 352 PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)
- 353 PICKUP SWEEPER, ONE CUBIC YARD AND OVER HOPPER CAPACITY(HIGHWAY AND HEAVY ONLY)
- 354 PIPELINE WRAPPING, CLEANING OR BENDING MACHINE (HIGHWAY AND HEAVY ONLY)
- 355 POWER PLANT ENGINEER, 100 KWH AND OVER (HIGHWAY AND HEAVY ONLY)
- 356

POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES (HIGHWAY AND HEAVY ONLY)

357 PUGMILL (HIGHWAY AND HEAVY ONLY)

358 PUMPCRETE (HIGHWAY AND HEAVY ONLY)

359 RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS (HIGHWAY AND HEAVY ONLY)

360 SCRAPER (HIGHWAY AND HEAVY ONLY)

361 SELF-PROPELLED SOIL STABILIZER (HIGHWAY AND HEAVY ONLY)

362 SLIP FORM (POWER DRIVEN) (PAVING) (HIGHWAY AND HEAVY ONLY)

363 TIE TAMPER AND BALLAST MACHINE (HIGHWAY AND HEAVY ONLY)

364 TRACTOR, BULLDOZER (HIGHWAY AND HEAVY ONLY)

365 TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING (HIGHWAY AND HEAVY ONLY)

366 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER (HIGHWAY AND HEAVY ONLY)

367 TUB GRINDER, MORBARK, OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)

368 WELL POINT DISMANTLING OR INSTALLATION (HIGHWAY AND HEAVY ONLY)

#### GROUP 5

2010-11-29 25.79 15.85 41.64

2011-05-01 25.79 16.85 42.64

369 AIR COMPRESSOR, 600 CFM OR OVER (HIGHWAY AND HEAVY ONLY)

370 BITUMINOUS ROLLER (UNDER EIGHT TONS) (HIGHWAY AND HEAVY ONLY)

371 CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED) (HIGHWAY AND HEAVY ONLY)

372 FORM TRENCH DIGGER (POWER) (HIGHWAY AND HEAVY ONLY)

373 FRONT END, SKID STEER UP TO 1C YD

374 GUNITE GUNALL (HIGHWAY AND HEAVY ONLY)

375 HYDRAULIC LOG SPLITTER (HIGHWAY AND HEAVY ONLY)

376 LOADER (BARBER GREENE OR SIMILAR TYPE) (HIGHWAY AND HEAVY ONLY)

377 POST HOLE DRIVING MACHINE/POST HOLE AUGER (HIGHWAY AND HEAVY ONLY)

378 POWER ACTUATED AUGER AND BORING MACHINE (HIGHWAY AND HEAVY ONLY)

379 POWER ACTUATED JACK (HIGHWAY AND HEAVY ONLY)

380 PUMP (HIGHWAY AND HEAVY ONLY)

381 SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR) (HIGHWAY AND HEAVY ONLY)

382 SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER (HIGHWAY AND HEAVY ONLY)

383 SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER (HIGHWAY AND HEAVY ONLY)

384 STUMP CHIPPER AND TREE CHIPPER (HIGHWAY AND HEAVY ONLY)

385 TREE FARMER (MACHINE) (HIGHWAY AND HEAVY ONLY)

**GROUP 6**

2010-11-29	24.92	15.85	40.77
2011-05-01	24.92	16.85	41.77

387 CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER (HIGHWAY AND HEAVY ONLY)

388 CONVEYOR (HIGHWAY AND HEAVY ONLY)

389 DREDGE DECK HAND (HIGHWAY AND HEAVY ONLY)

390 FIRE PERSON OR TANK CAR HEATER (HIGHWAY AND HEAVY ONLY)

391 GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING) (HIGHWAY AND HEAVY ONLY)

392 GREASER (TRACTOR) (HIGHWAY AND HEAVY ONLY)

393 LEVER PERSON (HIGHWAY AND HEAVY ONLY)

394 OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT) (HIGHWAY AND HEAVY ONLY)

395 POWER SWEEPER (HIGHWAY AND HEAVY ONLY)

396 SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS (HIGHWAY AND HEAVY ONLY)

397 TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

**GROUP 1**

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLIPREVIEWWAGE@STATE.MN.US](mailto:DLIPREVIEWWAGE@STATE.MN.US)

501 HELICOPTER PILOT (COMMERCIAL CONSTRUCTION ONLY)

502 TOWER CRANE 250 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)

503 TRUCK CRAWLER CRANE WITH 200 FEET OF BOOM AND OVER, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

**GROUP 2**

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLIPREVIEWWAGE@STATE.MN.US](mailto:DLIPREVIEWWAGE@STATE.MN.US)

504 CONCRETE PUMP WITH 50 METERS/164 FEET OF BOOM AND OVER (COMMERCIAL CONSTRUCTION ONLY)

505 PILE DRIVING WHEN THREE DRUMS IN USE (COMMERCIAL CONSTRUCTION ONLY)

506 TOWER CRANE 200 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)

507 TRUCK OR CRAWLER CRANE WITH 150 FEET OF BOOM UP TO AND NOT INCLUDING 200 FEET, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

**GROUP 3**

FOR RATE CALL 651-284-5091 OR  
EMAIL

- 508 ALL-TERRAIN VEHICLE CRANES (COMMERCIAL CONSTRUCTION ONLY)
- 509 CONCRETE PUMP 32-49 METERS/102-164 FEET (COMMERCIAL CONSTRUCTION ONLY)
- 510 DERRICK (GUY & STIFFLEG) (COMMERCIAL CONSTRUCTION ONLY)
- 511 STATIONARY TOWER CRANE 200 FEET AND OVER MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)
- 512 SELF-ERECTING TOWER CRANE 100 FEET AND OVER MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)
- 513 TRAVELING TOWER CRANE (COMMERCIAL CONSTRUCTION ONLY)
- 514 TRUCK OR CRAWLER CRANE UP TO AND NOT INCLUDING 150 FEET OF BOOM, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

**GROUP 4**

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

- 515 CRAWLER BACKHOE INCLUDING ATTACHMENTS (COMMERCIAL CONSTRUCTION ONLY)
- 516 FIREPERSON, CHIEF BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)
- 517 HOIST ENGINEER (THREE DRUMS OR MORE) (COMMERCIAL CONSTRUCTION ONLY)
- 518 LOCOMOTIVE (COMMERCIAL CONSTRUCTION ONLY)
- 519 OVERHEAD CRANE ( INSIDE BUILDING PERIMETER) (COMMERCIAL CONSTRUCTION ONLY)
- 520 TRACTOR . BOOM TYPE (COMMERCIAL CONSTRUCTION ONLY)

**GROUP 5**

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

- 521 AIR COMPRESSOR 450 CFM OR OVER (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)
- 522 CONCRETE MIXER (COMMERCIAL CONSTRUCTION ONLY)
- 523 CONCRETE PUMP UP TO 31 METERS/101 FEET OF BOOM
- 524 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL WHEN USED FOR CAISSON FOR ELEVATOR OR BUILDING CONSTRUCTION (COMMERCIAL CONSTRUCTION ONLY)
- 525 FORKLIFT (COMMERCIAL CONSTRUCTION ONLY)
- 526 FRONT END, SKID STEER 1 TO 5 C YD
- 527 HOIST ENGINEER ( ONE OR TWO DRUMS) (COMMERCIAL CONSTRUCTION ONLY)
- 528 MECHANIC-WELDER (ON POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)
- 529 POWER PLANT (100 KW AND OVER OR MULTIPLES EQUAL TO 100KW AND OVER) (COMMERCIAL CONSTRUCTION ONLY)
- 530 PUMP OPERATOR AND/OR CONVEYOR (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)



- 531 SELF-ERECTING TOWER CRANE UNDER 100 FEET MEASURED FROM BOOM FOOT PIN  
(COMMERCIAL CONSTRUCTION ONLY)
- 532 STRADDLE CARRIER (COMMERCIAL CONSTRUCTION ONLY)
- 533 TRACTOR OVER D2 (COMMERCIAL CONSTRUCTION ONLY)
- 534 WELL POINT PUMP (COMMERCIAL CONSTRUCTION ONLY)

#### GROUP 6

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

- 535 CONCRETE BATCH PLANT (COMMERCIAL CONSTRUCTION ONLY)
- 536 FIREPERSON, FIRST CLASS BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)
- 537 FRONT END, SKID STEER UP TO 1 C YD
- 538 GUNITE MACHINE (COMMERCIAL CONSTRUCTION ONLY)
- 539 TRACTOR OPERATOR D2 OR SIMILAR SIZE (COMMERCIAL CONSTRUCTION ONLY)
- 540 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER

#### GROUP 7

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

- 541 AIR COMPRESSOR 600 CFM OR OVER (COMMERCIAL CONSTRUCTION ONLY)
- 542 BRAKEPERSON (COMMERCIAL CONSTRUCTION ONLY)
- 543 CONCRETE PUMP/PUMPCRETE OR COMPLACO TYPE (COMMERCIAL CONSTRUCTION ONLY)
- 544 FIREPERSON, TEMPORARY HEAT SECOND CLASS BOILER LICENSE (COMMERCIAL  
CONSTRUCTION ONLY)
- 545 OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS AND MILLING  
MACHINES, OR OTHER SIMILAR POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)
- 546 PICK UP SWEEPER (ONE CUBIC YARD HOPPER CAPACITY) (COMMERCIAL CONSTRUCTION  
ONLY)
- 547 PUMP AND/OR CONVEYOR (COMMERCIAL CONSTRUCTION ONLY)

#### GROUP 8

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

- 548 ELEVATOR OPERATOR (COMMERCIAL CONSTRUCTION ONLY)
- 549 GREASER (COMMERCIAL CONSTRUCTION ONLY)
- 550 MECHANICAL SPACE HEATER (TEMPORARY HEAT NO BOILER LICENSE REQUIRED)  
(COMMERCIAL CONSTRUCTION ONLY)

#### GROUP 1

2010-11-29      18.30      7.55      25.85

601 MECHANIC . WELDER

602 TRACTOR TRAILER DRIVER

603 TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER  
OPERATED WINCHES)

<b>GROUP 2</b>	2010-11-29	24.25	13.15	37.40
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604 FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK

<b>GROUP 3</b>	2010-11-29	24.15	13.15	37.30
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605 BITUMINOUS DISTRIBUTOR DRIVER

606 BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION)

607 THREE AXLE UNITS

<b>GROUP 4</b>	2010-11-29	23.95	13.15	37.10
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608 BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER)

609 DUMP PERSON

610 GREASER

611 PILOT CAR DRIVER

612 RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS

613 TWO AXLE UNIT

614 SLURRY OPERATOR

615 TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER)

616 TRACTOR OPERATOR, UNDER 50 H.P.

701 HEATING AND FROST INSULATORS	2010-11-29	19.50	0.00	19.50
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702 BOILERMAKERS	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>
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703 BRICKLAYERS	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>
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704 CARPENTERS	2010-11-29	25.98	12.41	38.39
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705 CARPET LAYERS (LINOLEUM)	FOR RATE CALL 651-284-5091 OR EMAIL <a href="mailto:DLI.PREVIEWWAGE@STATE.MN.US">DLI.PREVIEWWAGE@STATE.MN.US</a>
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706 CEMENT MASONS	2010-11-29	31.55	17.00	48.55
707 ELECTRICIANS	2010-11-29	31.08	15.15	46.23
708 ELEVATOR CONSTRUCTORS	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
709 GLAZIERS	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
710 LATHERS	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
711 GROUND PERSON	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
712 IRONWORKERS	2010-11-29	33.80	20.37	54.17
	2011-05-01	34.10	20.37	54.47
713 LINEMAN	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
714 MILLWRIGHT	FOR RATE CALL 651-284-5091 OR EMAIL <u><a href="mailto:DLLPREVWAGE@STATE.MN.US">DLLPREVWAGE@STATE.MN.US</a></u>			
715 PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2010-11-29	22.25	5.63	27.88
716 PILEDRIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2010-11-29	29.43	13.69	43.12
717 PIPEFITTERS . STEAMFITTERS				

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

718 PLASTERERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

719 PLUMBERS

2010-11-29    27.67    18.12    45.79

720 ROOFER

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

721 SHEET METAL WORKERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

722 SPRINKLER FITTERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

723 TERRAZZO WORKERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

724 TILE SETTERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

725 TILE FINISHERS

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

726 DRYWALL TAPER

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

727 WIRING SYSTEM TECHNICIAN

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLI.PRE VWAGE@STATE.MN.US](mailto:DLI.PRE VWAGE@STATE.MN.US)

728 WIRING SYSTEMS INSTALLER

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLIPREYWAGE@STATE.MN.US](mailto:DLIPREYWAGE@STATE.MN.US)

729 ASBESTOS ABATEMENT WORKER

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLIPREYWAGE@STATE.MN.US](mailto:DLIPREYWAGE@STATE.MN.US)

730 SIGN ERECTOR

FOR RATE CALL 651-284-5091 OR  
EMAIL  
[DLIPREYWAGE@STATE.MN.US](mailto:DLIPREYWAGE@STATE.MN.US)



LABOR STANDARDS UNIT

**NOTICE OF CERTIFICATION OF TRUCK RENTAL RATES AND EFFECTIVE  
DATE PURSUANT TO *MINNESOTA RULES*, PART 5200.1105**

On May 10, 2010 the commissioner certified the minimum truck rental rates for highway projects in the state's ten highway and heavy construction areas for trucks and drivers operating "operating "five or more axle units, straight body trucks," "four axle units, straight body trucks," "three axle units," "tractor only," and "tractor trailers." The certification by the commissioner came after Notice of Determination of Truck Rental Rates by the commissioner, including the determination of truck operating costs, was published in the *State Register* on March 22, 2010 and the informal conference pursuant to *Minnesota Rules*, Part 5200.1105 to receive further public input prior to certification was held at the department on April 12, 2010.

The operating costs were determined by survey on a statewide basis. The operating cost for five or more axle units, straight body trucks" is determined to be \$44.46 per hour. The operating cost for "four axle units, straight body trucks" is determined to be \$36.81 per hour. The operating cost for "three axle units" is determined to be \$37.35 per hour. The operating cost for "tractor only" is determined to be \$41.58 per hour. The operating cost for "trailer only" is determined to be \$11.46 per hour. The operating cost for "tractor trailers" is determined to be \$53.04 per hour.

Adding the prevailing wage for drivers of these five types of trucks from each of the State's ten highway and heavy construction areas to the operating costs, the minimum hourly truck rental rate for the five types of trucks in each area is determined to be as follows:

	Tractor Trailer	Five or more axle	Four axle	Three Axle	Tractor only
Region 1	92.79	83.66	76.01	76.45	81.33
Region 2	86.46	77.37	69.72	63.30	75.00
Region 3	75.41	67.58	59.93	61.14	63.95
Region 4	74.47	65.36	57.71	70.11*	63.01
Region 5	89.99	68.31	60.66	64.08	78.53
Region 6	90.99	81.86	74.21	74.65	79.53
Region 7	86.46	77.37	69.72	70.11*	75.00
Region 8	79.42	65.21	57.56	50.82	67.96
Region 9	93.19	84.06	76.41	76.85	81.73
Region 10	86.46	77.37	69.72	50.12	75.00

\*Correction to prevailing wage labor rate in Regions 4 & 7 effective May 10, 2010 from \$33.01 to \$32.76.

The operating costs, including the average truck broker fee paid by those survey respondents who reported paying truck broker fees, and the truck rental rates may also be reviewed by accessing the department's web site at [www.dli.mn.gov](http://www.dli.mn.gov). Questions regarding the operational costs and truck rental rates can be answered by calling (651)284-5091.

The minimum truck rental rates certified for these five types of trucks in the state's ten highway and heavy construction areas will be effective for all highway and heavy construction projects financed in whole or part with state funds advertised for bid on or after May 10, 2010.

  
STEVE SVIGGUM  
COMMISSIONER



**SPECIAL PROVISIONS**  
**DIVISION A**  
**SPECIAL REQUIREMENTS**

**INTENT OF CONTRACT**

This Contract consists of grading, aggregate base, bituminous paving, and drainage on the following:

CSAH 6 - SAP 07-606-13  
CSAH 14 - SAP 07-614-10  
CSAH 17 - SAP 07-617-15  
C.R. 114 - County Project # 8140

Each road shall be considered individually on the schedule of prices in the proposal but only the grand total of all the roads combined will be considered in awarding the contract. Bids not including all projects will not be accepted.

**GOVERNING SPECIFICATIONS**

The State of Minnesota, Department of Transportation "Standard Specifications for Construction" 2005 EDITION shall apply in this contract, except as modified or altered in the following Special Provisions.

**SPECIAL PROVISIONS**  
**DIVISION S**  
**SPECIAL REQUIREMENTS**

**(1208) PROPOSAL GUARANTY**

No proposal will be considered unless it is accompanied by a guaranty complying with the requirements of Specification 1208 and providing a penal sum at least equal to 5 percent of the total amount of the bid (under all circumstances and without exception) as provided in Specification 1208.

**(1305) REQUIREMENT OF CONTRACT BOND**

The provisions of Mn/DOT 1305 are hereby deleted and replaced with the following:

The successful bidder shall furnish a payment bond equal to the contract amount and a performance bond equal to the contract amount as required by Minnesota Statutes, section 574.26. The surety and form of the bonds shall be subject to the approval of the contracting authority.

The contracting authority shall require for all contracts less than or equal to five million dollars (\$5,000,000.00), that the aggregate liability of the payment and performance bonds shall be twice the amount of the contract. All contracts in excess of five million dollars (\$5,000,000.00) shall have an aggregate liability equal to the amount of the contract.

**(1404) MAINTENANCE OF TRAFFIC, (1707) PUBLIC SAFETY, AND (2563) TRAFFIC CONTROL - MODIFIED**

The provisions of 1404 are supplemented as follows:

The Contractor shall furnish, install, maintain, and remove all traffic control devices required to provide safe movement of vehicular and/or pedestrian traffic passing through the work zone during the life of the Contract from the start of Contract operations to the final completion thereof. The Engineer will have the right to modify the requirements for traffic control as deemed necessary due to existing field conditions.

Blue Earth County will place "Road Construction" signs at both ends of the road segments prior to construction activities.

Traffic control devices include, but are not limited to, barricades, warning signs, trailers, flashers, cones, drums, pavement markings and flaggers as required and sufficient barricade weights to maintain barricade stability.

The Contractor shall furnish names, addresses, and phone numbers of at least three (3) individuals responsible for the placement and maintenance of traffic control devices. At least one of these individuals shall be "on call" 24 hours per day, seven days per week during the times any traffic control devices, furnished and installed by the Contractor, are in place. The required information shall be submitted to the Engineer at the Pre-construction Conference. The Contractor shall also furnish the names, addresses, and phone numbers of those individuals to the following:

- |  |                |
|--|----------------|
| 1. Local Agency Highway/Public Works Department  | (507) 304-4025 |
| 2. Local County/City Sheriff's/Police Department | (507) 387-8710 |
| 3. Local Fire Department                         | 911            |
| 4. City/Township Clerk                           |                |

The Contractor shall, at the pre-construction conference, designate a Work Zone Safety Coordinator who shall be responsible for safety and traffic control management in the Project work zone. The Work Zone Safety Coordinator shall be either an employee of the Contractor such as a superintendent or a foreman, or an employee of a firm which has a subcontract for overall work zone safety and traffic control management for the Project. The responsibilities of the Work Zone Safety Coordinator shall include, but not be limited to:

- Coordinating all work zone traffic control operations of the Project, including those of the Contractor, subcontractors and suppliers.
- Establishing contact with local school district, government, law enforcement, and emergency response agencies affected by construction before work begins.
- Maintaining a record of all known crashes within a work zone. This record should include all available information, such as: time of day, probable cause, location, pictures, sketches, weather conditions, interferences to traffic, etc. These records shall be made available to the Engineer upon request.

The Contractor shall inspect, on a daily basis, all traffic control devices, which the Contractor has furnished and installed, and verify that the devices are placed in accordance with the Traffic Control Layouts, these Special Provisions, and/or the MN MUTCD. Any discrepancy between the placement and the required placement shall be immediately corrected. The person performing the inspection shall be required to make a daily log. This log shall also include the date and time any changes in the stages, phases, or portions thereof go into effect. The log shall identify the location and verify that the devices are placed as directed or corrected in accordance with the Plan. All entries in the log shall include the date and time of the entry and be signed by the person making the inspection. The Engineer reserves the right to request copies of the logs as he deems necessary.

**Measurement and Payment:**

All traffic control required under this Contract shall be performed as incidental work for which no direct payment will be made.

**(1508) CONSTRUCTION STAKES, LINES, AND GRADES - MODIFIED**

Section 1508 is hereby supplemented to include the following:

The Contractor shall give the Engineer 48-hour notice of request for construction stakes.

**(1601) SOURCE OF SUPPLY AND QUALITY - MODIFIED**

The provisions of Mn/DOT 1601 are supplemented as follows:

The Contractor shall furnish a complete statement of the origin, composition and manufacturer of any or all materials to be used in the construction of the work together with samples, which may be subjected to whatever tests are required to determine their quality and fitness for work.

**(1701) LAWS TO BE OBSERVED (DATA PRACTICES)**

The provisions of Mn/DOT 1701 are supplemented with the following:

Bidders are advised that all data created, collected, received, maintained, or disseminated by the Contractor and any subcontractors in performing the work contained in this Contract are subject to the requirements of MN Statute Chapter 13, the Minnesota Government Data Practices Act (MGDPA). The Contractor shall comply with the requirements of the MGDPA in the same manner as the Department. The Contractor does not have a duty to provide access to public data to the public if the public data are available from the Department, except as required by the terms of the Contract.

**(1706) EMPLOYEE HEALTH AND WELFARE**

The provisions of Mn/DOT 1706 are supplemented with the following:

All construction operations shall be conducted in compliance with applicable laws, regulations and industry standards as described in Mn/DOT 1706. The Contractor shall be considered to be fully responsible for the development, implementation and enforcement of all safety requirements on the Project, notwithstanding any actions Mn/DOT may take to help ensure compliance with those requirements.

The Contractor shall submit a written safety program to the Engineer at the pre-construction conference addressing safety issues for all Project activities. This program shall contain name(s) of person(s) responsible for all safety requirements and this Contractor's Designee(s) shall be available at all times that work is being performed. The Contractor's designee(s) shall be responsible for correcting violations on the Project as observed by the Engineer or his/her representative.

The Contractor shall not use any motor vehicle equipment on this Project having an obstructed view to the rear unless:

- (A) The vehicle has a reverse signal alarm which is audible above the surrounding noise level; or
- (B) The vehicle is backed up only when an observer signals that it is safe to do so.

**A \$500.00 monetary deduction (per incident) will be assessed by Blue Earth County for violations of safety standards and requirements that have the potential for loss of life and/or limb of Project personnel or the public.** The areas of special concern include, but are not limited to excavation stability protection, fall protection, protection from overhead hazards, vehicle backup protection (see above), confined space safety, blasting operations, and personal safety devices.

None of the monetary deductions listed above shall be considered by the Contractor as allowance of noncompliance incidents of these safety requirements on this Project.

**(1707) PUBLIC CONVENIENCE AND SAFETY - MODIFIED**

Section 1707 is hereby supplemented to include the following:

The Contractor shall remove, store and replace all mailboxes, etc., that may interfere with the installation of utilities and grading. The Contractor shall contact and receive permission from the property owner before removing or relocating any mailboxes. Such work shall be considered incidental to the contract with no direct compensation made therefore. Damage to mailboxes, etc., during removal, storage shall be corrected and/or repaired by the Contractor.

Mailboxes shall not be disturbed until actual construction warrants removal. No such removal shall take place until the Engineer is on-site, has approved of and is witness to the work. Removed mailboxes shall be relocated to a temporary location subject to the approval of the Engineer, the homeowner and the U.S. Postal Service. Removed mailboxes shall be relocated promptly so as to prevent any interruption in postal service.

**(1710) TRAFFIC CONTROL DEVICES**

All traffic control devices and methods shall conform to the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), Minnesota Standard Signs Manuals Parts I and II, the Traffic Engineering Manual, and the following:

On any roadway having a 45 mph or higher speed limit prior to construction, all Category I and II temporary traffic control devices used after July 1, 2006 shall meet NCHRP 350 crash testing criteria. This includes all new and used Category I and Category II devices. Category I devices include tube markers, plastic drums and cones, etc. Category II devices include portable sign supports, Type I, II and III barricades, etc.

The Contractor is hereby advised that the MN MUTCD requires that all signs shall meet the NCHRP 350 crash testing criteria.

The Contractor shall provide the Project Engineer a Letter of Compliance stating that all of the Contractors Category I and II Devices are NCHRP 350 approved as of July 1, 2006. The Letter of Compliance must also include approved drawings of the different signs and devices and shall be provided to the Project Engineer at the Pre-construction meeting.

**(1712) PROTECTION & RESTORATION OF PROPERTY & LANDSCAPE - MODIFIED**

Protection and restoration of property and landscape shall be done in accordance with the requirements of 1712, except as modified below:

Any signs that interfere with construction and are adjusted or removed by authorization of the Engineer shall be reset in their original location, by the Contractor, prior to leaving the project each day. Said signs shall be set in

a temporary location, in a manner approved by the Engineer, during construction hours. Permanent replacement of traffic control devices, upon completion of all work, shall be by the County.

**(1803) PROSECUTION OF WORK - MODIFIED**

The provisions of 1803 are modified to the extent that the "Progress Schedule" (bar chart or critical path diagram) referenced in 1803.1 and elsewhere will not be required on this Project. This shall, however, in no way lessen the Contractor's responsibility for (1) providing the Engineer with the notifications required by the provisions of 1803.2; and (2) prosecuting the work diligently, as required therein, so as to assure satisfactory progress towards a timely completion of the Project. No work shall be performed during the hours of darkness as determined by the Engineer.

**(1806) DETERMINATION AND EXTENSION OF CONTRACT TIME**

The Contract Time will be determined in accordance with the provisions of Mn/DOT 1806 and the following:

Construction operations shall be started on or before May 30, 2011 or within eight (8) Calendar Days after the date of Notice of Contract Approval, whichever is later. Construction operations shall not commence prior to Contract Approval.

All work required under this Contract, except maintenance work and Final Clean Up shall be completed within 60 Working Days.

When, in the opinion of the Engineer, work on the Project cannot be performed due to failure of material delivery beyond the control of the Contractor, the Engineer will agree to a Suspension of Work in conformance with Mn/DOT 1803.4 and/or will cease the charging of working days, whichever the Engineer deems applicable.

A Resumption of Work Order will be issued by the Engineer after the Contractor has received delivery of the required material, and/or the Engineer will resume the charging of working days.

**(1807) FAILURE TO COMPLETE THE WORK ON TIME**

Liquidated damages will be assessed in accordance with the provisions of Mn/DOT 1807.

**(1901) MEASUREMENTS OF QUANTITIES - MODIFIED**

Measurement of quantities shall be in accordance with the provisions of 1901, and the following:

During each days production, loads will be selected at random by the Engineer for spot checks of total tons being hauled from the producing plant. These spot checks will be taken two or more times each day, to ensure that the actual load is equal to or exceeds the established uniform load weight. The results of these tests shall be recorded and the spot-check tickets given to the County as documentation of uniform loads. The loads selected for scale check shall be weighed by the Contractor on a platform scale which is large enough to weigh the entire hauling vehicle in one operation and which is accurate to within one percent (1%) of the net load weighed. If a commercial platform scale is used for the scale check, it shall have currently been tested and approved by the Division of Weight and Measures of the Minnesota Department of Public Service. Other scales may be tested by the Contractor in the presence of the Engineer or by the Divisions of Weight and Measures, Minnesota Department of Public Service. This will be considered incidental work and no direct compensation will be made therefore.

If a belt scale is used, it shall have automatic shutoff controls that can be calibrated for more than one net weight. Manual control of shutoff controls will not be permitted. All costs that the Contractor may incur as a result of this work will be considered to be incidental to the type of aggregate being weighed and no direct compensation will be made therefore.

All costs that the Contractor may incur as a result of this work will be considered to be incidental to the type of material being weighed and no direct compensation will be made therefore.

**(1904) EXTRA AND FORCE ACCOUNT WORK - MODIFIED**

The following sentence shall be added to the second paragraph of Mn/DOT 1904:

"Under no circumstance will the negotiated unit price for Extra Work which is performed by a subcontractor include a Prime Contractor allowance which exceeds that provided for in 1904(4), Paragraph 3."

**(1906) PARTIAL PAYMENTS - MODIFIED**

Partial payments shall be made in accordance with the requirements of 1906, except as modified below:

The first line of the third paragraph is modified to read: From the amounts ascertained as payable on each partial estimate, five (5) percent will be retained until final payment is made, unless reduced by authorization of the Engineer, on the last partial payment.

**(1910) FUEL COST ADJUSTMENT - MODIFIED**

The provisions of 1910 are hereby deleted. There will be no fuel cost adjustment for fuel escalation.

**(2051) MAINTENANCE & RESTORATION OF HAUL ROADS - MODIFIED**

Maintenance and restoration of haul roads shall be done in accordance with the provisions of 2051 except as modified below:

Prior to hauling of any materials on this project, Contractor shall submit a list of proposed haul roads to the Engineer for his approval. The Contractor shall also submit a list of all township roads that are proposed to be used as haul roads to the township official for their approval.

Contractor will be required to maintain and restore haul roads as per Specification No. 2051.4 Any costs that the Contractor may incur during this operation will be considered incidental and no direct compensation will be made therefore.

**(2104) REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES - MODIFIED**

Removal of miscellaneous structures on this project shall be in accordance with the provisions of 2104, except as modified below:

The bituminous pavement to be left in place shall be marked in the field by the Engineer and the Contractor shall saw the pavement in a manner that will not damage the surface left in place. The Contractor shall use a concrete or similar type saw. The use of jack-hammers or similar type equipment will not be permitted.

The bituminous pavement and miscellaneous structures shall be removed and disposed as per requirements of 2104 and shall become the property of the Contractor.

Abandoned structures and other obstructions shall be removed from the Right of Way and disposed of in accordance with the provisions of Mn/DOT 2104, except as modified below:

Measurement and payment for the removal and disposal of materials will be made only for those items of removal work specifically included for payment as such in the Proposal and as listed in the Plans. The removal of any unforeseen obstruction requiring in the opinion of the Engineer equipment or handling substantially different from that employed in excavation operations, will be paid for as Extra Work as provided in Mn/DOT 1403.

All removals shall be disposed of by the Contractor outside the Right of Way in accordance with Mn/DOT 2104.3C3 to the satisfaction of the Engineer.

**(2118) AGGREGATE SURFACING CL-2(M) - MODIFIED**

This work shall consist of constructing aggregate surface courses in accordance with the provisions of Mn/DOT 2118 except as modified below:

Compaction shall be by the Quality Compaction Method.

The third paragraph of 2118.3 shall be changed to read as follows:

Compaction shall be achieved by the "Quality Compaction" Method described in Mn/DOT 2211.3C or as directed by the Engineer. Aggregate surfacing CL-2 shall conform to the requirements of 3138 except as modified to require that no less than 10 percent nor more than 15 percent shall pass the No. 200 sieve. If crushed quarry rock (crushed limestone) is used, the Los Angeles Rattler Loss shall not exceed 45 percent (45%).

**(2221) AGGREGATE SHOULDERING CL-1(M) - MODIFIED**

Aggregate shouldering courses shall be constructed in accordance with the provisions of MNDOT 2221 except as modified below:

When the aggregate shoulders are completed, the shoulders shall be in reasonably close conformity with the cross sections shown in the Plans.

Recycled Concrete may not be used.

The second sentence in Mn/DOT 2221.1 Description, is revised to read as follows:

The aggregate shouldering shall be produced and placed under the Contractor's quality control program in accordance with the Mn/DOT Grading and Base Manual.

The following is hereby inserted after the first paragraph of Mn/DOT 2221.3C Spreading and Compacting:

Water shall be applied to the shouldering material during the mixing and spreading operations so that at the time of compaction the moisture content is not less than 5 percent of the dry weight.

Compaction shall be achieved by the "Quality Compaction" Method described in Mn/DOT 2211.3C or as directed by the Engineer.

All aggregate shouldering material shall be placed with a shouldering machine, except for driveways, entrances and other areas as may be directed by the Engineer. Shouldering shall be started immediately upon completion of the bituminous course and shall be a continuous operation until shoulders are completed unless otherwise directed by the Engineer.

Class 1(M) aggregate shall be placed on field driveways or other areas as directed by the Engineer. A shouldering machine is not required. The Contractor will be required to provide a skidloader for use in fine grading the driveways and field entrances, a motor grader will not be accepted as an acceptable alternate.

The gradation for Class 1 is modified to 10-15 percent passing the No. 200 sieve. If the Contractor elects to add crushed quarry rock as a portion of the CL-1(M) aggregate shouldering, Los Angeles Rattler Loss Tests shall be taken and the test results submitted to the Engineer for his approval prior to using on the project. The Los Angeles Rattler Loss shall apply only to the crushed quarry rock portion of the aggregate. That portion of the crushed rock quarry material which is retained on the No. 4 sieve shall not show a loss exceeding 45 percent.

The Contractor shall furnish all equipment, tools, labor, all materials, and other appurtenances necessary to complete the work.

#### **(2357) BITUMINOUS TACK COAT**

The provisions of Mn/DOT 2357 are hereby deleted and replaced with the following:

##### **2357.1 DESCRIPTION**

This work shall consist of the application of bituminous material (emulsion or liquid asphalt) on a bituminous or concrete pavement prior to paving a new lift of Hot Mixed Asphalt.

##### **2357.2 MATERIALS**

**A.....Bituminous Material.....3151**

The bituminous material for tack coat will be limited to one of the following kinds of emulsified asphalt. However, the Engineer may authorize the use of medium cure cutback asphalt (MC-250) during the early and late construction season when it is anticipated the air temperature may drop below 32 degrees Fahrenheit.

Allowable grades are as follows:

##### Emulsified Asphalt

Anionic.....SS-1, SS-1h  
Cationic .....CSS-1, CSS-1h

##### Cutback Asphalt

Medium Cure Liquid Asphalt.....MC-250

Only Certified Sources are allowed for use. Mn/DOT's Certified Source List is located at the following link: <http://www.dot.state.mn.us/products/index.html>.

##### **2357.3 CONSTRUCTION REQUIREMENTS**

##### **A Restrictions**

Tack coat operations shall be conducted in a manner that offers the least inconvenience to traffic, with



movement in at least one direction permitted at all times without pickup or tracking of the bituminous material.

The tack coat shall not be applied when the road surface or weather conditions are unsuitable as determined by the Engineer. The daily application of tack coat shall be limited to approximately the area on which construction of the subsequent bituminous course can reasonably be expected to be completed that day.

## **B Equipment**

The bituminous material shall be applied with a distributor meeting the requirements of 2321.3C1.

## **C Road Surface Preparations**

At the time of applying bituminous tack coat material, the road surface shall be dry and clean and all necessary repairs or reconditioning work shall have been completed as provided for in the Contract and approved by the Engineer.

All objectionable foreign matter on the road surface shall be removed and disposed of by the Contractor as the Engineer approves.

Preparatory to placing an abutting bituminous course, the contact surfaces of all fixed structures and the edge of the in-place mixture in all courses at transverse joints and in the wearing course at longitudinal joints shall be given a uniform coating of liquid asphalt or emulsified asphalt, applied by methods that will ensure uniform coating.

## **D Application of Bituminous Tack Coat Material**

Unless otherwise indicated in the Plans or provisions, the bituminous tack coat material shall be applied within the application rates shown below in Table 2357.3-D as based on pavement type or condition and type of bituminous material. The Engineer shall approve the time and rate of application. Only a Mn/DOT certified asphalt emulsion supplier is allowed to dilute the emulsion. When diluted, the supplier shall provide asphalt emulsion diluted 1 part emulsion to 1 part water. Dilution of asphalt emulsion in the field is not allowed. The Engineer may waive the tack coat requirement when multiple lifts are paved on the same day.

**Table 2357.3-D  
Tack Coat Application Rates**

Pavement Type or Condition	Application Rate, liter/square meter [gallons/sy]		
	Undiluted Emulsion SS-1, SS-1H, CSS-1, CSS-1H	Diluted Emulsion (1 part Emulsion to 1 part water) <sup>1</sup> SS-1, SS-1H, CSS-1, CSS-1H	MC Cutback <sup>2</sup> MC-250
New HMA	0.14 – 0.23 [0.03 – 0.05]	0.28 – 0.46 [0.06 – 0.10]	0.14 – 0.23 [0.03 – 0.05]
Aged HMA <sup>3</sup> or Un-milled PCC	0.23 – 0.37 [0.05 – 0.08]	0.46 – 0.69 [0.10 – 0.15]	0.23 – 0.37 [0.05 – 0.08]

Milled HMA or Milled PCC	0.32 – 0.46 [0.07 – 0.10]	0.64 – 0.92[0.14 – 0.20]	0.32 – 0.46 [0.07 – 0.10]
--------------------------------	------------------------------	--------------------------	------------------------------

- 1- As provided by the asphalt emulsion supplier
- 2- When approved by the Engineer
- 3- Older than 1 year

The temperature of the bituminous material at the time of application shall be approved by the Engineer, within the limits specified following:

SS-1, SS-1H, CSS-1, CSS-1H ..... 21 to 71°C (**70 to 160° F**)  
MC-250 ..... 74 to 104°C (**165 to 220° F**)

Unless otherwise directed, sand shall be spread on the newly tacked surface at pedestrian crossings.

#### 2357.4 METHOD OF MEASUREMENT

##### A Bituminous Material

Bituminous material used for tack coat will be measured by volume at 15°C (60° F).

#### 2357.5 BASIS OF PAYMENT

**Payment for the accepted quantity of asphalt emulsion and cutback shall be at the Contract price per unit of measure for undiluted asphalt emulsion and neat cutback.** Furnishing and applying sand on newly tacked surfaces at pedestrian crossings shall be at no expense to the Department with no direct compensation being made therefore. Should the Contract fail to include a Contract Item covering payment for the bituminous material used for tack coat, all costs of furnishing and applying bituminous tack coat material will be included in the compensation provided for the bituminous mixture, with no measurement made of the bituminous material used and with no direct compensation being made therefore.

Payment for the tack coat will be made on the basis of the following schedule:

Item No.	Item	Unit
2357.502 (gallon)	.....Bituminous Material for Tack Coat	Liter

#### **(2360) PLANT MIXED ASPHALT PAVEMENT - MODIFIED**

Mn/DOT 2360 is hereby deleted from the Mn/DOT Standard Specifications and replaced with the attached **2360 (Plant Mixed Asphalt Pavement) Specification** and as modified herein:

The sentence "In addition to the list the above pavement surface must meet requirements of 2399 (Pavement Surface Smoothness) requirements." is deleted from **2360.3.E Surface Requirements** of the attached **2360 (Plant Mixed Asphalt Pavement) Specification**. The requirements of 2360.3.E Surface Requirements will apply.

The bituminous pavement shall be constructed in accordance with the provisions of 2360, except as modified below:

Any additional work associated with Bridge Wingwall Paving will be considered incidental to placement of the bituminous pavement.

The mix design for bituminous overlays and surfacing will be based on the following aggregate types:

Bituminous Aggregates	(Gravel Intermediate)
Bituminous Aggregates	(Gravel Fine)
Bituminous Aggregates	(RAP)
Bituminous Aggregates	(Class A Coarse)
Bituminous Aggregates	(Class A Intermediate)
Bituminous Aggregates	(Class A Fine)

There shall be a minimum of four separately graded aggregate stockpiles, two for natural gravel and two for crushed Class A aggregate (three if 100% Class A aggregate is used). The use of crushed limestone will not be permitted as an aggregate in the bituminous mix. 100% Class A aggregates will be permitted.

Each aggregate type must individually meet Mn/DOT 3139 quality requirements. Natural Gravel materials shall meet the Mn/DOT Specification 3139, Class C.

The Bituminous Aggregate materials shall meet the following gradation requirements:

Sieve Size (Inch)	Coarse Class A	Intermediate Class A	Fine Class A	Intermediate Natural Gravel	Fine Natural Gravel
1"	100	--	--	--	--
3/4"	85-100	--	--	--	--
5/8"	--	100	--	100	--
1/2"	--	85-100	--	95-100	--
3/8"	30-60	50-100	100	85-100	100
#4	0-8	0-15	40-80	60-80	95-100
#8	--	--	10-40	50-70	80-100
#16	--	--	0-10	40-60	55-85
#30	--	--	--	30-50	30-60
#50	--	--	0-5	15-30	15-30
#100	--	--	--	5-15	5-15
#200	--	--	--	3-9	3-10

Asphalt Binder Material . . . . . AASHTO M320

The PG grade for each project shall be as shown on the individual plans.

Delete Table 2360-3

Field Tensile Strength Ratio (TSR) . . . . . ASTM D4867-92, Mn/DOT Modified

If the Tensile Strength Ratio (TSR) does not meet the minimum test requirements, the Contractor shall provide anti-strip additive at no additional cost to the County or modify their aggregate sources so as to meet the minimum requirements.

## 2360.2 Mixture Design

The mixture design shall be in accordance with the requirements of 2360.2, except as modified below:

The Contractor shall provide to the County information on the aggregate design, including gradations and quality of each aggregate type prior to mix design. The County shall be notified two days or more in advance of sampling and have the opportunity to be present when the samples are taken. The County will determine the aggregate mix design alternatives to be carried to the mix design process.

The Contractor shall provide all information on each mix design to the County. The County will determine the final JMF.

The Contractor shall provide separate mix designs for 1" and for 1 ½" or thicker bituminous layer thicknesses.

The Contractor shall produce a mixture of uniform composition closely conforming to the approved JMF to ensure the mixture when compacted will achieve the specified properties. During production the Contractor shall provide the County with mix design test results. The County may revise the JMF within the limits in Table 2360-7 without redesign of the mixture. The Contractor shall not revise the JMF without prior County Approval.

Further adjustments to the JMF without redesign may be requested by the Engineer or the Contractor because of unsatisfactory results. The Adjusted Asphalt Film Thickness of the mixture and the fines to asphalt ratio shall be reviewed prior to an approval of this adjustment by the Engineer.

Paragraphs 2360.2-G.10 through 2360.2-G.14.h are hereby deleted.

Recycled Asphaltic Pavement Materials (RAP), Recycled Asphalt Shingles (RAS), Crushed Concrete and Salvaged Aggregate shall not be used in maintenance overlays or wearing courses.

Recycled Asphaltic Pavement Materials (RAP) will be permitted only in the non-wear courses at a maximum rate of 20 percent. Recycled Asphalt Shingles (RAS), Crushed Concrete and Salvaged Aggregate will not be permitted in the non-wear courses.

#### Construction Requirements

Construction requirements will be in accordance with 2360.3 and the following:

The centerline joint will be closed at the end of each paving day by paving adjacent lanes unless the County agrees it is not feasible.

In addition to a paver being used to place the mainline bituminous mixtures, Contractor shall furnish and use a separate paver for placing all driveways, intersections, and other areas not on the mainline. This work shall be done in conjunction with the placing of all mainline bituminous materials (Wearing and Non-wearing Courses) unless otherwise directed by the Engineer. Using the mainline paver for this work (during mainline production) will not be permitted. When a second paver is required by the Engineer for use on the mainline paving, all electronic grade controls shall be in satisfactory working condition. In the case of matching existing surfaces on both sides of the paver a joint matching device will be required on both sides of the paver for reference control in matching existing surface grades at joints.

The Contractor's paver shall be equipped with two Trans-Tech Joint Makers or approved equivalent joint compacting devices. This unit shall be considered to be a part of the paver and no other direct compensation will be made therefore.

A pick-up machine will be required to be used in front of the paver unless previously approved by the Engineer.

A skidloader will be required for all approach grading. A motor grader will not be allowed unless previously approved by the Engineer.

All necessary work needed in preparing driveways, field approaches, intersections, and any other area designated by the Engineer shall be done by the Contractor with no direct payment being made therefore.

#### Compaction Operations

Compaction shall be obtained by the Ordinary Compaction Method in accordance with specification 2360.3-D.2 and the following:

Contractor shall be required to use three individual rollers for compaction. Vibratory steel for breakdown, pneumatic shall be used for intermediate rolling, and a steel static roller for finish rolling. All rollers shall be self-propelled and shall meet the requirements of specification 2360 as pertains to rollers. All the rollers shall be equipped with spray attachments for moistening all rolling surfaces on both the front and back. Contractor may be required to add liquid detergent to water. The vibratory steel rollers shall have a minimum total weight of 8 tons.

#### Measurement and Payment

Measurement of aggregate material used for production of wearing, binder, and base course mixture shall be based on the weight of each material used as required by the mix design current at the time of production.

Basis of payment shall be made in accordance with the provisions as shown below:

Separate payment will be made for Gravel Intermediate Aggregate, Gravel Fine Aggregate, RAP, Class "A" Coarse Aggregate, Class "A" Intermediate Aggregate, and Class A Fine Aggregate. Payment for the aggregate will be based on tons required by the mix design current at the time of production and at the unit bid price for each type of material. Payment for aggregate will not be made based on tons of material produced or placed in a stockpile. Payment for the bituminous material for mixture and produce, haul, and lay will be made based on actual tons used at the unit bid price for each type of material.

Measurement and Payment will be based on the following schedule:

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>
2360.609	Bituminous Material for Mixture (PG XX-XX)	Ton
2360.609	Bituminous Aggregate (Gravel Intermediate)	Ton
2360.609	Bituminous Aggregate (Gravel Fine)	Ton
2360.609	Bituminous Aggregate (RAP)	Ton
2360.609	Bituminous Aggregate (Class "A" Coarse)	Ton
2360.609	Bituminous Aggregate (Class "A" Fine)	Ton
2360.609	Bituminous (Produce, Haul, & Lay)	Ton

Item No. 1903, Compensation for Increased or Decreased Quantities, shall not apply to this work and any excess material upon completion of this project, shall not be measured for payment.

No incentive / disincentive payment will be made for Density, Ride, AFT, or Centerline Joint Density.

#### **(2580) INTERIM PAVEMENT MARKING - MODIFIED**

This work shall consist of placing interim pavement markings on those pavements, prior to opening them to traffic, where the in-place surface is to be covered by a subsequent paving course or the permanent lane

markings are to be placed at a future date. The Contractor has the option of furnishing the following material, unless the material type is indicated in the Plan:

- (A) Removable Preformed Plastic Pavement Marking (100 mm [4 inch] wide) Tape Mn/DOT 3355.
- (B) Traffic Marking Paint in accordance with Mn/DOT 3591 and 3592, and the following specifications:
  - THREE MINUTE DRY ALKYD TRAFFIC PAINTS
  - APPLICATION SPECIFICATION FOR CONVENTIONAL TRAFFIC MARKING PAINT

The above specifications can be accessed on the Mn/DOT Office of Traffic, Safety, and Operation website.

When centerline or lane markings (excluding edge lines) are removed, interim pavement markings shall be provided prior to opening the roadway to traffic. The markings shall be applied to a clean, dry surface in accordance with the manufacturer's recommendation or as approved by the Engineer.

The Contractor will be required to use primer prior to the installation of all tape regardless of weather or pavement conditions or Manufacturer's specifications. All other installation procedures and materials used shall follow the manufacturer's specifications. Application of the primer shall be incidental to the cost of installing the tape.

The Contractor shall place all centerline and lane markings prior to ending work each day. Edge lines shall be placed within 14 calendar days.

Interim markings shall consist of center line markings including no passing zone markings, center lines and lane lines (excluding edge lines) in accordance with the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD). Interim markings for skip stripes shall be 100 mm [4 inch] wide plus or minus 6 mm [1/4 inch] and cycle lengths as indicated in the Plan. The Markings shall be placed parallel to the direction of traffic flow. Solid lines used to make no passing zones and lanes shall be 100 mm [4 inch] in width, plus or minus 6 mm [1/4 inch]. Lateral placement of the markings from centerline shall be as directed by the Engineer.

**If the Contractor is negligent in adhering to the above provisions, he/she shall be subject to an hourly charge assessed at a rate of \$250.00 per hour for each hour or any portion thereof which the Engineer determines that the Contractor has not complied.**

The interim markings shall be maintained and replaced by the Contractor without additional compensation until they are covered by the next paving course, are replaced with permanent pavement markings, or final acceptance of the Project is made. The Contractor will be required to remove all Temporary Raised Pavement Markings used as Interim Pavement markings. Any solid line delineations on the final pavement surface marked with Pavement Marking Tape must also be removed prior to placing the Permanent Pavement Markings. The Engineer may require the removal of any Interim Pavement Markings that will interfere with the placement of the permanent markings or could cause confusion to the traveling public if left in place. Removal of interim pavement Markings, if required, shall be incidental to the Contract bid price for the Item, and shall be in accordance with Mn/DOT 2102.

Interim pavement markings will be measured by the actual length in meters [linear feet] of each line marked as indicated in the Plan and will not include the gap between skip stripes. No additional quantity will be included for repair or renewal work. Measurement for raised pavement markings will be made according to the length of line being simulated.

Payment for Interim Pavement Marking at the Contract price per unit of measure shall be compensation in full for all costs of furnishing and placing the marking, removal if required, and all necessary maintenance and renewal work.

Payment for Interim Pavement Marking will be made on the basis of the following schedule:

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
2580.603	Interim Pavement Marking .....meter	[ <b>linear foot</b> ]

The Provisions of Mn/DOT 1903 are modified such that no "unit" price adjustment will be made in the event of increased or decreased quantities of Interim Pavement Marking.

### **(3138) AGGREGATE FOR SURFACE AND BASE COURSES**

The provisions of Mn/DOT 3138 are hereby modified as follows :

The second paragraph of Mn/DOT 3138.2B Gradation Tables 3138-1 and 2, is revised to read as follows:

If Class 7 is substituted for Classes 1, 3, 4, 5, or 6, it shall meet the gradation requirements of the substituted class (Table 3138-1); except that, for Class 5 and 6, up to 5 percent by mass (**weight**) of the total composite mixture may exceed 25.0 mm (**1 inch**) sieve but 100 percent must pass the 37.5 mm (**1.5 inch**) sieve. Surfacing aggregate mixtures containing salvaged materials shall meet the gradation requirements of the materials specified in the Plan. All gradations will be run on the composite mixture before extraction of the bituminous material.

TABLE 3138-1 in Mn/DOT 3138.2B Gradation Tables 3138-1 and 2, is hereby deleted and replaced with the following:

**TABLE 3138-1**  
**BASE AND SURFACING AGGREGATE**  
**Total Percent Passing**

Sieve Size	Class 1 (A)	Class 2	Class 3 (A)	Class 4 (A)	Class 5 (A) (B)	Class 6 (A) (B)
75 mm (3 inches)	--	--	--	--	--	--
50 mm (2 inches)	--	--	100	100	--	--
37.5 mm (1½ inches)	--	--	--	--	--	--
25.0 mm (1 inch)	--	--	--	--	100	100
19.0 mm (¾ inch)	100	100	--	--	90-100	90-100
9.5 mm (⅜ inch)	65-95	65-90	--	--	50-90	50-85
4.75 mm (No. 4)	40-85	35-70	35-100	35-100	35-80	35-70
2.00 mm (No. 10)	25-70	25-45	20-100	20-100	20-65	20-55
425 µm (No. 40)	10-45	12-30	5-50	5-35	10-35	10-30
75 µm (No. 200)	8.0-15.0	5.0-13.0	5.0-10.0	4.0-10.0	3.0-10.0	3.0-7.0

- (A) When salvaged materials are substituted for another class of aggregate, it shall meet the gradation requirements of the class being replaced except as amended in 3138.2 B.
- (B) The gradation requirements for aggregates containing 60% or more crushed quarry rock may be amended with the concurrence of the Project Engineer and the Grading and Base Engineer.

The first paragraph of Mn/DOT 3138.3 Sampling and Testing, is hereby deleted and replaced with the following:

Samples for testing to determine compliance with the aggregate gradation specifications for base and shoulder surfacing shall be obtained from the roadway at a time when the material is ready for compaction. However, Class 1, 2, and 7 shoulder surfacing aggregates may be sampled from a stockpile, tested, and accepted before roadway placement, provided that:

- (a) No more than 25 percent of the stockpile samples fail to meet gradation requirements.
- (b) The average of all stockpile tests meet requirements.
- (c) The Contractor mixes the material during placement to the satisfaction of the Engineer.

The fifth paragraph of Mn/DOT 3138.3 Sampling and Testing, is revised to read as follows:

The stockpile shall be sampled at the rate of one field gradation test per 1,000 metric tons (**tons**) of aggregate used on the Project.



**(3139) GRADED AGGREGATE FOR BITUMINOUS MIXTURES - MODIFIED**

The graded aggregate for use in bituminous mixtures shall meet the provision of 3139, except as modified below:

See Special Provisions 2360 for additional Bituminous Mixture Aggregate Requirements.

Mn/DOT 3139 is hereby deleted and replaced with the following:

**3139 Graded Aggregate for Bituminous Mixtures**

**3139.1 Scope**

Provide graded aggregate for use in bituminous mixtures.

**3139.2 PLANT MIXED ASPHALT Requirements**

**A Composition**

Provide graded aggregate composed of any combination of the following sound durable particles as described in 3139.2B.

Do not use graded aggregate containing objectionable materials including:

- (1) Metal,
- (2) Glass,
- (3) Wood,
- (4) Plastic,
- (5) Brick, or
- (6) Rubber.

Provide coarse aggregate free of coatings of clay and silt.

Do not add soil materials such as clay, loam, or silt to compensate for a lack of fines in the aggregate.

Do not blend overburden soil into the aggregate.

Feed each material or size of material from an individual storage unit at a uniform rate.

Do not place blended materials from different sources, or for different classes, types, or sizes together in one stockpile unless approved by the Engineer as a Class E aggregate.

**B Classification**

**B.1 Class A**

Provide crushed igneous bedrock consisting of basalt, gabbro, granite, gneiss, rhyolite, diorite, and andosite. Rock from the Sioux Quartzite Formation may contain no greater than 4.0 percent non-Class A aggregate. Do not blend or add non-Class A aggregate to Class A aggregate.

**B.2 Class B**

Provide crushed rock from other bedrock sources such as carbonate and metamorphic rocks (Schist).

### **B.3 Class C**

Provide natural or partly crushed natural gravel obtained from a natural gravel deposit.

### **B.4 Class D**

Provide 100 percent crushed natural gravel produced from material retained on a square mesh sieve with an opening at least twice as large as Table 3139-2 allows for the maximum size of the aggregate in the composite asphalt mixture. Ensure the amount of carryover, material finer than the selected sieve, no greater than 10 percent of the Class D aggregate by weight.

### **B.5 Class E**

Provide a mixture consisting of at least two of the following classes of approved aggregate:

- (1) Class A,
- (2) Class B, and
- (3) Class D.

### **B.6 Steel Slag**

Steel slag cannot exceed 25% of the total mixture aggregate and be free from metallic and other mill waste. The Engineer will accept stockpiles if the total expansion is no greater than 0.5 percent as determined by ASTM D 4792

### **B.7 Taconite Tailings**

Obtain taconite tailings from ore mined westerly of a north-south line located east of Biwabik, Minnesota (R15W-R16W) or from ore mined in southwestern Wisconsin.

### **B.8 Recycled Asphalt Shingles (RAS)**

Provide recycled asphalt shingles manufactured from waste scrap asphalt shingles (MWSS) or from tear-off scrap asphalt shingles (TOSS). Consider the percentage of RAS used as part of the maximum allowable Recycled Asphalt Pavement (RAP) percentage. See Table 3139-3.

#### **B.8.A .....RAS Gradation Mn/DOT Laboratory Procedure 1801**

Provide RAS in accordance with the following gradation requirements:

<b>Table 3139-1 RAS Gradation</b>	
<b>Sieve size</b>	<b>Percent passing</b>
½ in [12.5 mm]	100
No. 4 [4.75 mm]	90

#### **B.8.B Binder Content**

Determine the binder content using chemical extraction meeting the requirements of Mn/DOT Lab Procedure 1851 or 1852.

#### **B.8.C Bulk Specific Gravity**

The Contractor may use an aggregate bulk specific gravity (Gsb) of 2.650 in lieu of determining the shingle aggregate Gsb in accordance with Mn/DOT Lab Procedure 1205.

#### **B.8.D Waste Materials**

Do not allow extraneous materials including metals, glass, rubber, nails, soil, brick, tars, paper, wood, and plastics greater than 0.5 percent by weight of the graded aggregate as determined by material retained on the No. 4 [4.75 mm] sieve as specified in Mn/DOT Laboratory Procedure 1801.

#### **B.8.E Stockpile**

Do not blend an RAS stockpile with other salvage material. Do not blend MWSS and TOSS. The Contractor may blend virgin sand material with RAS to minimize agglomeration if the Contractor accounts for the blended sand in the final mixture gradation.

#### **B.8.F Certification**

Ensure the processor provides RAS certification on the following Department form "Scrap Asphalt Shingles from Manufacture Waste" or "Tear-Off Scrap Asphalt Shingles" at [www.dot.state.mn.us/materials/bituminous.html](http://www.dot.state.mn.us/materials/bituminous.html)

#### **B.9Crushed Concrete and Salvaged Aggregate**

The Contractor may incorporate no greater than 50 percent of crushed concrete and salvaged aggregate in non-wear mixtures. Do not use crushed concrete in wearing courses.

#### **B.10 Ash**

Sewage sludge ash and waste incinerator ash are allowed as an aggregate source at a maximum of 5% of the total weight of the mixture. Only use sewage sludge ash meeting the requirements of the Tier II hazard evaluation criteria as approved by the Engineer with concurrence with Mn/DOT's Environmental Assessment Engineer in the mixture. Only use waste incinerator ash sources approved by the Engineer with concurrence with Mn/DOT's Environmental Assessment Engineer.

#### **B.11 Recycled Asphalt Pavement (RAP)**

##### **B.11.A Aggregate Angularity**

Provide combined RAP and virgin aggregates that meet the composite coarse and fine aggregate angularity for the mixture being produced.

##### **B.11.B Objectionable Material**

Do not use RAP containing objectionable materials including metal, glass, wood, plastic, brick, or rubber.

##### **B.11.C Asphalt Binder Content**

Determine the asphalt binder content using the Mn/DOT Lab Manual Method 1851 and 1852.

##### **B.11.D Bulk Specific Gravity**

Determine the bulk specific gravity in accordance with Mn/DOT Laboratory Procedure 1205 or 1815.

#### **C Quality**

##### **C.1 Los Angeles Rattler Test..... Mn/DOT Laboratory Procedure 1210**

Ensure a coarse aggregate loss no greater than 40 percent.

##### **C.2 Soundness (Magnesium Sulfate) ..... Mn/DOT Laboratory Procedure 1219**

Maximum loss after 5 cycles on the coarse aggregate fraction (material retained on No. 4 [4.75 mm] sieve for any individual source within the mix) as follows:

- (1) Percent passing the  $\frac{3}{4}$  in [19 mm] sieve to percent retained on the  $\frac{1}{2}$  in [12.5 mm] sieve,  $\leq 14\%$ ,
- (2) Percent passing the  $\frac{1}{2}$  in [12.5 mm] sieve to percent retained on the  $\frac{3}{4}$  in [9.5 mm] sieve,

- ≤18%,
- (3) Percent passing the ¾ in [9.5 mm] sieve to percent retained on the No. 4 [4.75 mm] sieve, ≤ 23%,
  - (4) For the composite if all three size fractions are tested, the composite loss ≤ 18%, and acceptance will be granted if:
    - (4.1) If the Contractor meets the composite requirement, but fails to meet at least one of the individual components, the Engineer may accept the source if each individual component is no greater than 110 percent of the requirement for that component.
    - (4.2) If the Contractor meets each individual component requirement, but fails to meet the composite, the Engineer may accept the source if the composite is no greater than 110 percent of the requirement for the composite.

Coarse aggregate that exceeds the requirements in this section for material passing the No. 4 [4.75 mm] sieve cannot be used.

**C.3 Spall Materials and Lumps..... Mn/DOT Laboratory Procedure 1219**

Stop asphalt production if the percent of spall or lumps measured in the stockpile or cold feed exceeds the values listed in Table 3139-3. Determine lump compliance by dry batching.

Each Class A and each Class C Aggregate shall not exceed 5.0 percent spall and the lumps in the fraction retained on the No. 4 sieve shall not exceed 0.5 percent.

**C.4 Insoluble Residue Test..... Mn/DOT Laboratory Procedure 1221**

If using Class B carbonate materials ensure the portion of the insoluble residue passing the No. 200 [75 µm] sieve is no greater than 10 percent.

Blending of sources and/or beds with an insoluble residue up to 15% is allowed to meet the 10% insoluble residue requirement. Individual beds thinner than 150 mm [**6 inches**] up to 5% of the total face height, are exempt from the 15% maximum insoluble residue requirement. However, the aggregate producer shall practice good quality control at all times and exclude poor quality stone to the extent practical, regardless of the bed thickness and/or pocket size and location.

No carbonate quarry rock from the Platteville Geological Formation is allowed.

**D Gradation**

Ensure the aggregate gradation broad bands meet the following requirements in accordance with AASHTO T-11 (passing the No. 200 [75 µm] wash) and AASHTO T-27.

See Special Provisions 2360 for Bituminous Mixture Aggregate Requirements

<b>Table 3139-3 Mixture Aggregate Requirements</b>				
<b>Aggregate Blend Property</b>	<b>Traffic Level 2</b>	<b>Traffic Level 3</b>	<b>Traffic Level 4</b>	<b>Traffic Level 5</b>
20 year Design ESAL's	<1 million	1 - 3 million	3 - 10 million	10 – 30 million
Min. Coarse Aggregate Angularity (ASTM D5821) (one face / two face), %- Wear (one face / two face), %- Non-Wear	30/- 30/-	55 / - 55 / -	85 / 80 60/ -	95 / 90 80 / 75
Min. Fine Aggregate Angularity (FAA) (AASHTO T304, Method A) %- Wear %-Non-Wear	40 40	42 40	44 40	45 40
Flat and Elongated Particles, max % by weight, (ASTM D 4791)	-	10 (5:1 ratio)	10 (5:1 ratio)	10 (5:1 ratio)
Min. Sand Equivalent (AASHTO T 176)	-	-	45	45
Max. Total Spall in fraction retained on the #4 [4.75mm] sieve – Wear Non-Wear	5.0 5.0	2.5 5.0	1.0 2.5	1.0 2.5
Maximum Spall Content in Total Sample – Wear Non-Wear	5.0 5.0	5.0 5.0	1.0 2.5	1.0 2.5
Maximum Percent Lumps in fraction retained on the #4 [4.75mm] sieve	0.5	0.5	0.5	0.5
Class B Carbonate Restrictions				
Maximum% -#4 [-4.75mm] Final Lift/All other Lifts	100/100	100/100	80/80	50/80
Maximum% +#4 [+4.75mm] Final Lift/All other Lifts	100/100	100/100	50/100	0/100
Max. allowable scrap shingles– MWSS <sup>(1)</sup> Wear/Non Wear	5/5	5/5	5/5	5/5
Max. allowable scrap shingles – TOSS <sup>(1)</sup> Final Lift/All other Lifts	5/5	5/5	0/5	0/0

(1) MWSS is manufactured waste scrap shingle and TOSS is tear-off scrap shingle.

### 3139.3 Permeable Asphalt Stabilized Stress Relief Course (PASSRC) and Permeable Asphalt Stabilized Base (PASB) Requirements

#### A Restrictions

Do not use recycled materials including glass, concrete, bituminous, shingles, ash, and steel slag.

#### B Gradation

The Gradation limits are also considered the Job Mix Formula (JMF) limits.

##### B.1 PASB

Table 3139-4 PASB Aggregate Gradation	
Sieve Size	Percent Passing
1 ½ inch [37.5 mm]	100
1 inch [25.0 mm]	95 - 100
¾ inch [19.0 mm]	85 - 95
3/8 inch [9.5 mm]	30 - 60
No. 4 [4.75 mm]	10 - 30
No. 8 [2.36 mm]	0 - 10
No. 30 [600 µm]	0 - 5
No. 200 [75 µm]	0 - 3

##### B.2 PASSRC

Table 3139-5 PASSRC Aggregate Gradation	
Sieve Size	Percent Passing
5/8 inch [16.0 mm]	100
1/2 inch [12.5 mm]	85 - 100
3/8 inch [9.5 mm]	50 - 100
No. 4 [4.75 mm]	0 - 25
No. 8 [2.36 mm]	0 - 5

#### C Quality

Requirements will meet all of 3139.2.C.

## D Mixture Quality Requirements

Table 3139-6 Mixture Aggregate Requirements for PASSRC & PASB	
Aggregate Blend Property	
<b>Coarse Aggregate Angularity</b> (ASTM D5821) (one face/two face) % PASSRC <sup>(1)</sup> PASB <sup>(1)</sup>	95/- -65
Fine Aggregate Angularity (FAA) (AASHTO T304, Method A) %	NA
Flat and Elongated Particles, max(2) % by weight, (ASTM D 4791)	NA
Clay Content (2) (AASHTO T 176)	NA
Total Spall in fraction retained on the 4.75mm [#4] sieve	3.0
Maximum Spall Content in Total Sample	5.0
Maximum Percent Lumps in fraction retained on the 4.75mm [#4] sieve	0.5

- (1) Carbonate Restrictions: If Class B (as defined in 3139.2.B.2), crushed carbonate quarry rock (limestone or dolostone), is used in the mixture, or if carbonate particles in the material retained on the 4.75 mm [No. 4] sieve exceeds 55 percent, by weight, the minus 0.075 mm [# 200] sieve size portion of the insoluble residue shall not exceed 10 percent.

### 3139.4 Ultra Thin Bonded Wearing Course (UTBWC) Requirements.

#### A. Restrictions

Do not use recycled materials including glass, concrete, bituminous, shingles, ash, and steel slag.

#### B. Coarse Aggregate

Provide a Class A aggregate, as defined in 3139.2.B.1, in accordance with the following requirements:

Table 3139-7 UTBWC Coarse Aggregate Requirements		
Tests	Mn/DOT Laboratory Manual Method	Limit, %
Flat and elongated ratio at 3:1	1208	≤ 25
Los Angeles Rattler Test (LAR)	1210	≤ 40
Bulk Specific Gravity	1204	

### C. Fine Aggregate

Provide fine aggregate, passing the No. 4 [4.75 mm] sieve in accordance with the following requirements:

<b>Table 3139-8</b> <b>Fine Aggregate Requirements</b>		
<b>Tests</b>	<b>Method</b>	<b>Limit, %</b>
Sand equivalent*	AASHTO T 176	≥ 45
Uncompacted void content	Mn/DOT Laboratory Manual 1206	≥ 40
Bulk Specific Gravity	Mn/DOT Laboratory Manual 1205	

### 3139.5 SAMPLING AND TESTING

Perform sampling, sieve analysis, lumps, crushing, and shale testing meeting the requirements of the Mn/DOT Laboratory Manual.



## **(2360) PLANT MIXED ASPHALT PAVEMENT**

February 4, 2011

### **2360.1 DESCRIPTION**

This work consists of constructing plant mixed asphalt pavement on a prepared subgrade.

Plant mixed asphalt pavement designed according to a gyratory mix design method for use as a pavement surface.

#### **A Mixture Designations**

The Department will designate the mixture for asphalt mixtures in accordance with the following:

- (1) The first two letters indicate the mixture design type:
  - (1.1) SP = Gyratory Mixture Design.
- (2) The third and fourth letters indicate the course:
  - (2.1) WE = Wearing and shoulder wearing course, and
  - (2.2) NW = Non-wearing Course.
- (3) The fifth letter indicates the maximum aggregate size:
  - (3.1) A = ½ in [12.5mm], SP 9.5,
  - (3.2) B = ¾ in [19.0mm], SP 12.5,
  - (3.3) C = 1 in [25.0mm], SP 19.0, and
  - (3.4) D = ¾ in [9.5mm], SP 4.75.
- (4) The sixth digit indicates the Traffic Level (ESAL's  $\times 10^6$ ) in accordance with Table 2360-1, "Traffic Levels."

<b>Table 2360-1 Traffic Levels</b>	
<b>Traffic Level</b>	<b>20 Year Design ESALs</b>
2 *	< 1
3	1 – < 3
4	1 – < 10
5	10 – < 30
NOTE: The requirements for gyratory mixtures in this specification are based on the 20 year design traffic level of the project, expressed in Equivalent Single Axle Loads (ESAL's) $1 \times 10^6$ ESALs	
* AADT < 2,300	
AADT > 2,300 to < 6,000	

- (5) The last two digits indicate the air void requirement:
  - (5.1) 40 = 4.0 percent for wear mixtures, and
  - (5.2) 30 = 3.0 percent for non-wear and shoulder.
- (6) The letter at the end of the mixture designation identifies the asphalt binder grade in accordance with Table 2360-2, "Asphalt Grades."

Table 2360-2 Asphalt Grades	
Letter	Grade
A	PG 52 – 34
B	PG 58 – 28
C	PG 58 – 34
E	PG 64 – 28
F	PG 64 – 34
H	PG 70 – 28
L	PG 64 – 22

Ex: Gyratory Mixture Designation -- SPWEB540E (Design Type, Lift, Aggr. Size, Traffic Level, Voids, Binder)

## 2360.2 MATERIALS

### A Aggregate

Use aggregate materials in accordance with 3139.2.

### B Asphalt Binder Material.....3151

Table 2360-3 Asphalt Binder Selection Criteria for all Mixtures with RAP		
Asphalt Binder Selection Criteria for all Mixtures with RAP Specified PG Asphalt Binder Grade	≤ 20 % RAP	> 20 % RAP*
PG XX-28 and PG 52-34	Use specified grade	Use specified grade
PG XX-34	Use specified grade	Use blending chart*
* Use the blending chart on file with the Mn/DOT Chemical Laboratory to verify compliance with the specified binder grade when RAP is greater than 20 percent. The Department may take production samples to ensure the the asphalt binder material meets the requirements.		

### C Additives

The Department defines additives as material added to an asphalt mixture or material that do not have a specific pay item.

Do not incorporate additives into the mixture unless approved by the Engineer. Add anti-foaming agents to asphalt cement at the dosage rate recommended by the manufacturer. The Contractor may add mineral filler in quantities no greater than 5 percent of the total aggregate weight. The Contractor may add hydrated lime in quantities no greater than 2 percent of the total aggregate weight. Do not add a combination of mineral filler and hydrated lime that exceeds 5 percent of the total aggregate weight. Use methods for adding additives as approved by the Engineer.

#### C.1 Mineral Filler ..... AASHTO M 17

##### C.1.a Mineral Filler – Hydrated Lime

Provide hydrated lime for asphalt mixtures with no greater than 8 percent unhydrated oxides (as received basis) and meeting the requirements of AASHTO M 216. Use a method to introduce and mix hydrated lime and aggregate as approved by the Engineer before beginning mixture production.

#### C.2 Liquid Anti-Stripping Additive (Contractor Added)

If adding a liquid anti-strip additive to the asphalt binder, complete blending before mixing the asphalt binder with the aggregate. Only use liquid anti-strip additives that ensure the asphalt binder meets the Performance Grade (PG) requirements in 3151. The Contractor may use asphalt binder with liquid anti-strip added at the refinery or the Contractor may add liquid anti-strip at the plant site. If using asphalt binder with liquid anti-strip added at the refinery, ensure the supplier tests the binder and additive blend to confirm compliance with the AASHTO M 320. If an anti-strip agent is added at the plant, the plant mixed asphalt producer is considered a supplier and the binder must conform to the requirements of 3151. Do not pave until the asphalt binder and additive blend testing results meet the criteria in 2360.2.B, "Asphalt Binder Material."

#### **C.2.a Mixture Requirements at Design**

Design the mixture with the same asphalt binder supplied to the plant site using mixture option 1, "Laboratory Mixture Design" or mixture option 2, "Modified Mixture Design."

Provide documentation with either design option and include the amount of anti-strip needed to meet the minimum tensile strength requirements. Verify that the binder with the anti-strip meets the PG binder requirements for the mixture.

#### **C.2.b Contractor Production Testing Requirements**

Sample and test the asphalt binder and anti-strip blend daily. The Contractor may test the blend by viscosity, penetration, or dynamic shear rheometer (DSR) of the blend. If the contract requires the use of a polymer modified asphalt binder in the mixture, use the DSR as the daily QC test.

Send the Engineer and Mn/DOT Chemical Laboratory Director a weekly QC report summarizing the results of the daily testing.

Perform at least one test bi-weekly per project to ensure the binder and anti-strip blend meets the requirements of AASHTO M 320. Send the test results to the Engineer and Mn/DOT Chemical Laboratory Director.

Provide asphalt binder and anti-strip blend field verification samples in accordance with 2360.2.G.7, "Production Test."

#### **C.2.c Liquid Anti-Strip Additive Metering System**

Include a liquid anti-strip flow meter and an anti-strip pump with the metering system. Connect the flow meter to the liquid anti-strip supply to measure and display only the anti-strip being fed to the asphalt binder.

Position the meter readout so that the inspector can easily read it.

Provide means to compare the flow meter readout with the calculated output of the anti-strip pump.

Provide a system that displays the accumulated anti-strip quantity being delivered to the mixer unit in gallons [liters] to the nearest gallon [liter] or in units of tons [metric tons] to the nearest 0.001 ton [0.001 tonne].

Calibrate and adjust the system to maintain an accuracy of  $\pm 1$  percent.

Calibrate each plant set-up before producing the mixture.

"Stick" the anti-strip tank at the end of the day's production to verify anti-strip usage quantities. The Engineer may require "sticking" on a daily basis.

Ensure the system has a spigot for sampling the binder and anti-strip after blending.

Use alternative blending and metering systems only when pre-approved by the Engineer.

**C.3 Coating and Anti Stripping Additive .....3161**

**D Bituminous Tack Coat .....2357**

**E Mixture Design**

**E.1 Submittal Location**

Submit documentation and sample aggregate materials for review to the District Materials Laboratory.

**E.2 Aggregate Quality**

Provide aggregate in accordance with 3139.2.

**E.3 Restrictions**

Do not add aggregates and materials not included in the original mixture submission unless otherwise approved by the Engineer.

**E.4 Responsibility**

Design a gyratory mixture that meets the requirements of this specification in accordance with the following:

- (1) Most current AASHTO T 312, Mn/DOT modified,
- (2) The Asphalt Institute's Superpave Mix Design Manual SP-2 (Use a 2 h short term aging period for volumetric), and
- (3) The Laboratory Manual.

**E.5 Type of Mixture Design Submittal**

**E.5.a Option 1 — Laboratory Mixture Design**

**E.5.a(1) Aggregate**

Submit the aggregate samples for option 1, at least 15 working days before beginning production samples for quality testing. At least 30 calendar days before beginning asphalt production, submit samples of aggregates that require the magnesium sulfate soundness test to the District Materials Laboratory. Test the samples for quality of each source, class, type, and size of virgin and non-asphaltic salvage aggregate source used in the mix design. Retain a companion sample of equal size until the Department issues a Mixture Design Report. Provide 24 h notice of intent to sample aggregates to the Engineer. Provide samples in accordance with the following:

<b>Table 2360-4 Aggregate Sample Size</b>		
<b>Classification</b>	<b>Sieve</b>	<b>Weight</b>
Virgin	Retained on No. 4 [4.75 mm]	80 lb [35 kg]
Virgin	Passing No. 4 [4.75 mm]	35 lb [15 kg]
Recycled asphalt pavement (RAP)	—	80 lb [35 kg]
Recycled asphalt shingles (RAS)	—	10 lb [5 kg] sample of representative RAS material

**E.5.a(2) Mixture Sample**

At least 7 working days before the start of asphalt production, submit the proposed Job Mix Formula (JMF) in writing and signed by a Level II Quality Management mix designer for each combination of aggregates to be used in the mixture. Include test data to demonstrate conformance to mixture properties as specified in Table 2360-7, "Mixture Requirements," and 3139.2, "Bituminous Aggregates." Use forms approved by the Department for the submission.

Submit an uncompacted mixture sample plus briquettes, in conformance with the JMF, compacted at the optimum asphalt content and required compactive effort for laboratory examination and evaluation. Provide a mixture sample size and the number of compacted briquettes and in accordance with the following:

<b>Table 2360-5 Mixture Sample Requirements</b>	
<b>Item</b>	<b>Gyratory Design</b>
Uncompacted mixture sample size	75 lb [30 kg]
Number of compacted briquettes	2

**E.5.a(3) Tensile Strength Ratio Sample**

At least 7 days before actual production, submit sample to the District Materials Laboratory for verification of moisture sensitivity retained tensile strength ratio (TSR). The Engineer may test material submitted for TSR verification for maximum specific gravity  $G_{mm}$  compliance in addition to TSR results. The Engineer will reject the submitted mix design if the tested material fails to meet the  $G_{mm}$  tolerance. If the Engineer rejects a mix design, submit a new mix design in accordance with 2360.2.E, "Mixture Design." The Contractor may use one of the following options to verify that the TSR meets the requirements in Table 2360-7, "Mixture Requirements."

**E.5.a(4) Option A**

Batch material at the design proportions including optimum asphalt. Split the sample before curing and allow samples to cool to room temperature, approximately 77 °F [25 °C]. Submit 80 lb [35 kg] of mixture to the District Materials Laboratory for curing and test verification. Use a cure time of 2 h ±15 minutes at 290 °F [144 °C] cure time for both groups and follow procedures Laboratory Manual Method 1813.

**E.5.a(5) Option B**

Batch and cure in accordance with Option A. Compact, and submit briquettes and uncompacted mixture in accordance with Table 2360-6, "Option B Mixture Requirements."

<b>Table 2360-6 Option B Mixture Requirements</b>	
<b>Item</b>	<b>Gyratory Design</b>
Un-compacted mixture sample size	8,200 g
Number of compacted briquettes*	6
Compacted briquette air void content	6.5 % – 7.5 %
* 6 in [150 mm] specimens.	

For both options, cure for 2 h ±15 min at 290° F [144° C] meeting the requirements in the Mn/DOT Laboratory Manual Method 1813.

**E.5.a(6) Aggregate Specific Gravity**

Determine the specific gravity of aggregate in accordance Laboratory Manual Method 1204 and 1205.

### E.5.b Option 2 — Modified Mixture Design

The Contractor may use the modified mixture design if testing shows that the aggregates meet the requirements of 3139.2 in the current construction season and if the Level II mix designer submitting the mixture design has at least 2 years experience in mixture design. The Department will not require mixture submittal.

#### E.5.b(1) Mixture Aggregate Requirements

Size, grade, and combine the aggregate fractions in proportions that are in accordance with 3139.2.

#### E.5.b(2) JMF Submittal

At least 2 working days before beginning asphalt production, submit a proposed JMF in writing to the District Materials Laboratory signed by a Level II Quality Management mix designer for each combination of aggregates. For each JMF submitted, include documentation in accordance with 2360.2.E.5.a, "Option1 – Laboratory Mixture Design," to demonstrate conformance to mixture properties as specified in Table 2360-7, "Mixture Requirements," and Table 3139-3, "Mixture Aggregate Requirements." Submit the JMF on forms approved by the Department.

#### E.5.b(3) Initial Production Test Verification

The Department will take a mix verification sample within the first four samples at the start of production of each mix type. A Field tensile strength ratio (TSR) sample will be taken and tested within the first 5,000 tons [4500 tonnes] of the start of production if required by the Engineer.

### E.6 Mixture Requirements

The Department will base mixture evaluation on the trial mix tests and in accordance with Table 2360-7, "Mixture Requirements."

<b>Table 2360-7 Mixture Requirements</b>				
<b>Traffic Level</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
20 year design ESALs	< 1 million	1 – 3 million	3 – 10 million	10 – 30 million
Gyratory mixture requirements:				
Gyrations for $N_{design}$	40	60	90	100
% Air voids at $N_{design}$ , wear	4.0	4.0	4.0	4.0
% Air voids at $N_{design}$ , Non-wear and all shoulder	3.0	3.0	3.0	3.0
Adjusted Asphalt Film Thickness, minimum $\mu$	8.5	8.5	8.5	8.5
Ratio of Added New Asphalt Binder to Total Asphalt Binder, <sup>(1)</sup> min%	70	70	70	70
TSR*, minimum %	75	75	80†	80†
Fines/effective asphalt	0.6 – 1.2	0.6 – 1.2	0.6 – 1.2	0.6 – 1.2
* Use 6 in [150 mm] specimens in accordance with 2360.2.1, "Field Tensile Strength Ratio (TSR)."    Mn/DOT minimum = 65 † Mn/DOT minimum = 70 1 The ratio of added new asphalt binder to total asphalt binder needs to be 70% or greater ((added binder/total binder) x 100 ≥ 70) in both mixtures that contain RAP and in mixtures that include shingles as part of the allowable RAP percentage.				

#### E.7 Coarse/Fine Mixture Determination

Base the determination of coarse and fine graded mixtures on the percentage of material passing the No. 8 [2.36 mm] sieve in accordance with Table 2360-8, "Coarse/Fine Mixture Determination."

Table 2360-8 Coarse/Fine Mixture Determination		
Gradation	Fine Mixture, % passing No. 8 [2.36 mm]	Coarse Mixture, % passing No. 8 [2.36 mm]
A	> 47	≤ 47
B	> 39	≤ 39
C	> 35	≤ 35
D	—	—

#### E.8 Adjusted Asphalt Film Thickness (Adj. AFT)..... Mn/DOT Laboratory Manual Method 1854

Ensure the adjusted asphalt film thickness (Adj. AFT) of the mixture at design and during production meets the requirements of Table 2360-7, "Mixture Requirements." Base the Adj. AFT on the calculated aggregate surface area (SA) and the effective asphalt binder content.

#### E.9 Documentation

Include the following documentation and test results with each JMF submitted for review:

- (1) Names of the individuals responsible for the QC of the mixture during production,
- (2) Low project number of the contract on which the mixture will be used,
- (3) Traffic level and number of gyrations,
- (4) The following temperature ranges as supplied by the asphalt binder supplier:
  - (4.1) Laboratory mixing and compaction,
  - (4.2) Plant discharge, and
  - (4.3) Field compaction.
- (5) The percentage in units of 1 percent (except the No. 200 sieve [0.075 mm] in units of 0.1 percent) of aggregate passing each of the specified sieves (including the No. 16, No. 30, No. 50, and No. 100) for each aggregate to be incorporated into the mixture. Derive the gradation of the aggregate from the RAP after extracting the residual asphalt.
- (6) Source descriptions of the following:
  - (6.1) Location of material,
  - (6.2) Description of materials,
  - (6.3) Aggregate pit or quarry number, and
  - (6.4) Proportion amount of each material in the mixture in percent of total aggregate.
- (7) Composite gradation based on (5) and (6) above. Include virgin composite gradation based on (6) and (7) above for mixtures containing RAP/RAS.
- (8) Bulk and apparent specific gravities and water absorption (by % weight of dry aggregate). Both coarse and fine aggregate, for each product used in the mixture (including RAP/RAS). Use Mn/DOT Laboratory Manual Method 1204 and 1205. The tolerance allowed between the Contractor's and the Department's specific gravities are  $G_{sb} \text{ (individual)} = 0.040$  [+4 and -4] and  $G_{sb} \text{ (combined)} = 0.020$ .
- (9) FHWA 0.45 power chart represented by the composite gradation plotted on Federal Form PR-1115
- (10) Test results from the composite aggregate blend at the proposed JMF proportions showing compliance with Table 3139-3:
  - (10.1) Coarse Aggregate Angularity,
  - (10.2) Fine Aggregate Angularity, and
  - (10.3) Flat and Elongated

- (11) Extracted asphalt binder content for mixtures containing RAP/RAS with no retention factor included.
- (12) Asphalt binder percentage in units of 0.1 percent based on the total mass of the mixture and the PG grade.
- (13) Each trial mixture design includes the following:
  - (13.1) At least 3 different asphalt binder contents (with at least 0.4 percent between each point), with at least one point at, one point above and one point below the optimum asphalt binder percentage.
  - (13.2) Maximum specific gravity for each asphalt binder content calculated based on the average of the effective specific gravities measured by using at least two maximum specific gravity tests at the asphalt contents above and below the expected optimum asphalt binder content.
  - (13.3) Test results on at least two specimens at each asphalt binder content for the individual and average bulk specific gravities, density, and heights.
  - (13.4) Percent air voids of the mixture at each asphalt binder content.
  - (13.5) Adj. AFT for each asphalt binder content.
  - (13.6) Fines to Effective Asphalt (F/A) ratio calculated to the nearest 0.1 percent.
  - (13.7) TSR at the optimum asphalt binder content.
  - (13.8) Graphs showing air voids, adjusted AFT,  $G_{mb}$ ,  $G_{mm}$  and unit weight vs. percent asphalt binder content for each of the three asphalt binder contents submitted with trial mix.
  - (13.9) Evidence that the completed mixture will conform to design air voids ( $V_a$ ), Adj. AFT, TSR, F/A<sub>e</sub> (Fines to effective asphalt ratio).
  - (13.10) Gyratory densification tables and curves generated from the gyratory compactor for all points used in the mixture submittal.
  - (13.11) % new asphalt binder to total asphalt binder.
- (14) The Contractor has the option of augmenting the submitted JMF with additional sand or rock. When using this option, provide samples of the aggregate for quality analysis in accordance with 2360.2.E.5, "Type of Mixture Design Submittal." Also provide mix design data for two additional design points per add-material. Provide one point to show a proportional adjustment to the submitted JMF that includes 5 percent, by weight, add-material at the JMF optimum asphalt percent. Provide a second point to show a proportional adjustment to the submitted JMF that includes 10 percent, by weight, add material at the JMF optimum asphalt percent. Report the following information for each of these two points:
  - (14.1) The maximum specific gravity determined by averaging two tests,
  - (14.2) Test results showing the individual and average bulk specific gravity, density, and height of at least two specimens at the optimum asphalt binder content,
  - (14.3) Percent air voids for the mixture for each point,
  - (14.4) Fines to Effective Asphalt ratio calculated to the nearest 0.1 of a percent,
  - (14.5) Crushing of the coarse and fine aggregate,
  - (14.6) Adj. AFT, and,
  - (14.7) Up to two add materials will be allowed.

## **F Mixture Design Report**

The Department will provide a Mixture Design Report consisting of the JMF. Include the following in the JMF:

- (1) Composite gradation,
- (2) Aggregate component proportions,
- (3) Asphalt binder content of the mixture,
- (4) Design air voids,
- (5) Adj. asphalt film thickness, and
- (6) Aggregate bulk specific gravity values.



Show the JMF limits for gradation control sieves in accordance with aggregate gradation broadbands shown in Table 3139-2, percent asphalt binder content, air voids, and Adj. AFT. If the Department issues a Mixture Design Report, this report only confirms that the Department reviewed the mixture and that it meets volumetric properties. The Department makes no expressed or implied guaranty or warranty regarding placement and compaction of the mixture.

Provide materials meeting the requirements of the aggregate and mixture design before issuing a Mixture Design Report. The Department will review two trial mix designs per mix type designated in the plan per contract at no cost to the Contractor. The Department will verify additional mix designs at a cost of \$2,000 per design.

Provide a Department - reviewed Mixture Design Report for all paving except for small quantities of material as described in 2360.3.G, "Small Quantity Paving."

For city, county, and other agency projects, provide the District Materials Laboratory a complete project proposal, including addenda, supplemental agreements, change orders, and plans sheets, including typical sections, affecting the mix design before the Department begins the verification process.

## **G Mixture Quality Management**

### **G.1 Quality Control (QC)**

Provide and maintain a QC program for plant mix asphalt production, including mix design, process control inspection, sampling and testing, and adjustments in the process related to the production of an asphalt pavement.

#### **G.1.a Certification**

Provide the following to obtain certification:

- (1) Completed and submitted request form application for plant inspection.
- (2) Site map showing stockpile locations.
- (3) Signed asphalt plant inspection report showing the plant and testing facility passed as documented by Asphalt Plant Inspection Report (TP 02142-02, TP 02143-02). The inspection report must also include documentation showing plant and laboratory equipment has been calibrated and is being maintained to the tolerance shown in the Bituminous Manual and sections 1200, 1800, and 2000 of the Mn/DOT Laboratory Manual.
- (4) A Department-signed Mixture Design Report (MDR) before mixture production.

#### **G.1.b Maintaining Certification**

Maintain plant certification by documenting the production and testing of the certified plant asphalt mixtures. Sample and test asphalt mixtures in accordance with this section and meeting the requirements of the Schedule of Materials Control.

##### **G.1.b(1) Annual Certification**

Perform annual certification after winter suspension.

##### **G.1.b(2) Sampling Rate**

Sample at the rate in accordance with 2360.2.G.6 and the requirements of the Schedule of Materials Control.

##### **G.1.b(3) Plant Moved**

Recertify the plant if the plant moves to a new or previously occupied location.

**G.1.c. Plant Certification Revocation**

The Engineer may revoke certification for any of the following reasons:

- (1) If the mix does not meet the requirements of 2360.2.E.6 and 3139.2,
- (2) If there is a failure to meet the testing rates, or
- (3) If it is determined records were falsified.

If the Engineer revokes plant certification, the Department may revoke the Technical Certification of the individual or individuals involved. The Department will maintain a list of companies with revoked certifications.

**G.2 Quality Assurance (QA)**

The Engineer will perform Quality Assurance (QA) on a sample that is a companion to the Contractor's QC sample to accept the work. The Engineer will perform the following:

- (1) Conduct QA and verification sampling and testing,
- (2) Observe the QC sampling and tests,
- (3) Monitor the required QC summary sheets and control charts,
- (4) Verify calibration of QC laboratory testing equipment,
- (5) Communicate Department test results to the Contractor's personnel on a daily basis, and
- (6) Ensure Independent Assurance (IA) sampling and testing requirements are met.

The Engineer will periodically witness the sampling and testing being performed by the Contractor. If the Engineer observes that the Contractor is not performing sampling and quality control tests in accordance with the applicable test procedures, the Engineer may stop production until the Contractor takes corrective action. The Engineer will notify the Contractor of observed deficiencies promptly, both verbally and in writing.

The Engineer may obtain additional samples, at any time and location during production, to determine quality levels in accordance with 2360.2.G.3, "Verification Sample."

The Department will post a chart with the names and telephone numbers for the personnel responsible for QA.

The Engineer will calibrate and correlate laboratory testing equipment in accordance with the Bituminous Manual and Laboratory Manual.

<b>Table 2360-9</b>	
<b>Allowable Differences between Contractor and Department Test Results*</b>	
<b>Item</b>	<b>Allowable Difference</b>
Mixture bulk specific gravity ( $G_{mb}$ )	0.030
Mixture maximum specific gravity ( $G_{mm}$ )	0.019
Adjusted AFT (calculated)	1.2
Fine Aggregate Angularity, uncompacted voids (U) %	1
Coarse Aggregate Angularity, % fractured faces (%P)	15
Aggregate Individual Bulk Specific Gravity (+ No. 4 [+4.75 mm])	0.040
Aggregate Individual Bulk Specific Gravity (- No. 4 [-4.75mm])	0.040
Aggregate combined blend Specific Gravity ( $G_{sb}$ )	0.020
Tensile strength ratio (TSR), %	Table 2360-7
<b>Asphalt binder content:</b>	
Meter method, %	0.2
Spot check method, %	0.2
Chemical extraction methods, %	0.4
Incinerator oven, %	0.3
Chemical vs. meter, spot check, or incinerator methods	0.4
Incinerator oven vs. spot check	0.4
<b>Gradation sieve, % passing:</b>	
1 in [25.0 mm], ¾ in [19.0 mm], ½ in [12.5 mm], ¼ in [9.5 mm]	6
No. 4 [4.75 mm]	5
No. 8 [2.36 mm], No. 16 [1.18 mm], No. 30 [0.60 mm]	4
No. 50 [0.30 mm]	3
No. 100 [0.15 mm]	2
No. 200 [0.075 mm]	1.2
* Test tolerances listed are for single test comparisons.	

### G.3 Verification Sample

The Department will test a verification sample to assure compliance of the Contractor's QC program. The Department will provide the Contractor a verification companion, which is defined as a companion sample to the verification sample Mn/DOT uses. Test and use this verification companion sample as part of the QC program. Use the verification companion sample to replace the next scheduled QC sample. The Department recommends sampling enough material to accommodate retesting in case the samples fail.

The Department will perform verification testing on at least one set of production tests in accordance with 2360.2.G.6.b, "Production," and 2360.2.G.7, "Production Test," on a daily basis per mix type. Use the verification companion sample to verify the requirements of Table 3139-2, Table 3139-3, and Table 2360-7. Compare the verification companion sample to the verification sample for compliance with allowable tolerances in Table 2360-9, "Allowable Differences between Contractor and Department Test Results." These include the mixture properties of  $G_{mm}$  (mixture maximum gravity),  $G_{mb}$  (mixture bulk gravity), asphalt binder content, Adjusted AFT (calculated), Coarse and Fine Aggregate crushing, and gradation. Perform one test per week on a verification companion for coarse and fine aggregate crushing meeting the requirements of 2360.2.G.7.g "Coarse Aggregate Angularity" and 2360.2.G.7.h, "Fine Aggregate Angularity." These do not include the aggregate bulk specific gravity  $G_{sb}$ , fines to effective asphalt, or the tensile strength ratio (TSR). Determine the asphalt binder content and gradation in accordance with the extraction method specified in 2360.2.G.7.a, "Asphalt Binder Content," or 2360.2.G.7.b, "Gyratory Bulk Specific Gravity."

The Contractor may access the Department's verification test results for  $G_{mm}$  (mixture maximum gravity),  $G_{mb}$  (mixture bulk gravity), air voids (calculated), asphalt binder content, Adj. AFT (calculated) within 2 working days from the time the sample is delivered to the District Laboratory. The Department will provide the

gradation and crushing results to the Contractor within three working days. The Department will include the verification test results on the test summary sheet. The Department will compare the results with the Contractor's verification companion for the allowable tolerances in Table 2360-9, "Allowable Differences between Contractor and Department Test Results." The Department will consider the verification process complete if the Contractor's verification companion meets the tolerances in Table 2360-9.

If the tolerances between the Contractor's verification companion and the Department's verification sample do not meet the requirements of Table 2360-9, the Department will retest the material. If the retests fail to meet tolerances, the Department will substitute the Department's verification test results for the Contractor's results in the QC program and use those results for acceptance. The Department will only substitute the out-of-tolerance parameters and will recalculate volumetric properties if applicable.

If the Adj. AFT calculation does not meet the tolerance, equalize the Department Adj. AFT result by increasing the original Department value by 0.5 microns. Use the increased Department Adj. AFT for the Individual Adjusted AFT result and to calculate the Moving Average Adj. AFT results. The increased Department Adj. AFT will form the basis for acceptance.

If the verification sample retests do not meet tolerances, the Department will investigate the cause of the difference that will include a review of testing equipment, procedures, worksheets, gyratory specimen height sheets, and personnel to determine the source of the problem. The Engineer may require both the Department and Contractor to perform at least one hot-cold comparison of mixture properties.

To perform a hot-cold comparison, split the sample into three representative portions. The Engineer will observe the Contractor testing. Immediately compact one part while still hot. Apply additional heating to raise the temperature of the sample to compaction temperature if necessary. Allow the second and third part to cool to air temperature. Retain the second part and transport the third part to the District Materials Laboratory. On the same day and at the same time as the District Materials Laboratory, heat samples to compaction temperature and compact. Develop a calibration factor to compare the specific gravity of the hot compacted samples to reheated compacted samples. Use at least two gyratory specimens for each test. The Engineer or the Contractor may request that this test be repeated. Reheat mix samples to 160° F [70° C] to allow splitting of the sample into representative fractions for the various tests. Do not overheat the mixture portions used for testing maximum specific gravity test.

The Department will test the previously collected QA samples until they meet the tolerances or until the Department has tested all of the remaining samples. After testing the samples, the Department will test QA samples subsequent to the verification sample until tolerances are met. The Department will base acceptance on QC data. The Department will base acceptance on QC data with substitution of Department test results for those parameters out of tolerance. Cease mixture production and placement if reestablished test results do not meet tolerances within 48 h. Resume production and placement only after meeting the tolerances. The process for dispute resolution is available on the Bituminous Office website.

If the Engineer analyzes the data using methods for determination of bias on file in the Bituminous Office and finds a bias in the test results, the Engineer will specify which results to use. If through analysis of data, it is determined that there is a bias in the test results, the Engineer will determine which results are appropriate and will govern.

#### **G.4 Contractor Quality Control**

##### **G.4.a Personnel**

Submit an organizational chart listing the names and phone numbers of individuals and alternates responsible for the following:

- (1) Mix design,
- (2) Process control administration, and
- (3) Inspection.

Provide QC technicians certified as a Level I Bituminous Quality Management (QM) Tester meeting the requirements of the Mn/DOT Technical Certification Program for QC testing and Level II Bituminous QM Mix Designer to make process adjustments. Provide at least one person per paving operation certified as a Level II Bituminous Street Inspector.

Provide a laboratory with equipment and supplies for Contractor quality control testing and maintain with the following:

- (1) Up-to-date equipment calibrations and a copy of the calibration records with each piece of equipment,
- (2) Telephone,
- (3) Fax and copy machine; however, the Engineer may waive the requirement to have a fax machine if internet and email are available,
- (4) Internet and Email,
- (5) Computer,
- (6) Printer, and
- (7) Microsoft Excel, version 2007 or newer

Laboratory equipment need to meet the requirements listed in Section 400 of the Bituminous Manual, Laboratory Manual, and these specifications, including having extraction capabilities. Before beginning production, the laboratory equipment needs to be calibrated and operational.

Calibrate and correlate all testing equipment in accordance with the Bituminous Manual and Laboratory Manual. Keep records of calibration for each piece of testing equipment in the same facility as the equipment.

#### **G.4.b Sampling and Testing**

Take QC samples at random locations, quartered from a larger sample of mixture, from behind the paver and in accordance with the Schedule of Materials Control. The Engineer may approve alternate sampling locations. When the Engineer approves of an alternate sampling location and used by the Contractor, the daily verification sample must still be taken from behind the paver. The procedure for truck box sampling, an alternate sampling location, is on file in the Bituminous Office. Store compacted mixture specimens and loose mixture companion samples for 10 calendar days. Label these split companion samples with companion numbers. Determine random numbers and locations using the Bituminous Manual, Section 5-693.7 Table A or ASTM D 3665, Section 5.

#### **G.5 Production Test Requirements**

Determine the planned tonnage [metric tons] for each mixture planned for production during the production day. Divide the planned production by 1,000 and round to the next highest whole number. The result is the number of production tests required for the mixture. Table 2360-11, "Production Testing Rates" shows the required production tests.

Split the planned production into even increments and select sample locations as described above. If actual tonnage is greater than the planned tonnage, repeat the calculation above and provide additional tests if the calculation results in a higher number of production tests. During production, the Department will not require mixture volumetric property tests if mix production is no greater than 300 ton [270 tonne]. Provide production tests if the accumulative weight on successive days is greater than 300 ton [270 tonne].

If there is a choice of more than one Mn/DOT approved test procedure, select one method at the beginning of the project with the approval of the Engineer and use that method for the entire project. The Contractor and Engineer may agree to change test procedures during the construction of the project.

#### **G.5a Establishing an Ignition Oven Correction Factor .....Mn/DOT Lab. Manual 1852 Appendix**

On the first day of production, for each mixture type, both the Contractor and the Agency will establish an ignition oven correction factor from the produced mixture. Re-establish correction factors when:

There are aggregate or RAP substitutions

There are 3 or more tolerance failures on the extracted asphalt content between the Agency and the Contractor as defined by Table 2360-9, "Allowable Differences between Contractor and Department Test Results".

## **G.6 Production Testing Rates**

### **G.6.a Start –Up**

At the start of production, for the first 2,000 ton [1,800 tonne] of each mix type, perform testing at the following frequencies:

<b>Table 2360-10 Production Start-Up Testing Rates</b>			
<b>Production Test</b>	<b>Testing Rates</b>	<b>Laboratory Manual Method</b>	<b>Section</b>
Bulk Specific Gravity	1 test per 500 ton [450 tonne]	1806	2360.2.G.7.b
Maximum Specific Gravity	1 test per 500 ton [450 tonne]	1807	2360.2.G.7.c
Air Voids (calculated)	1 test per 500 ton [450 tonne]	1808	2360.2.G.7.d
Asphalt Content	1 test per 500 ton [450 tonne]	1853	2360.2.G.7.a
Add AC/Total AC Ratio (calculated)	1 test per 1000 ton [900 tonne]	1853	2360.2.G.7.a
Adj. AFT (Calculated)	1 test per 500 ton [450 tonne]	1854	2360.2.E.6.b
Gradation	1 test per 500 ton [450 tonne]	1203	2360.2.G.7.f
Coarse Aggregate Angularity	1 test per 1,000 tons [900 tonne]	1214	2360.2.G.7.g
Fine Aggregate Angularity (FAA)	1 test per 1,000 ton [900 tonne]	1213	2360.2.G.7.h
Fines to Effective Asphalt Ratio (calculated)	1 test per 500 ton [450 tonne]	1203 & 1853	2360.2.G.7.f & 2360.2.G.7.a

### **G.6.b Production**

After producing the first 2,000 ton [1,800 tonne] of each mix type test at the following frequencies:

<b>Table 2360-11</b> <b>Production Testing Rates</b>			
<b>Production Test</b>	<b>Sampling and Testing Rates</b>	<b>Test Reference</b>	<b>Section</b>
Bulk Specific Gravity	Divide the planned production by 1,000. Round the number to the next higher whole number	Laboratory Manual 1806	2360.2.G.7.b
Maximum Specific Gravity	Divide the planned production by 1,000. Round the number to the next higher whole number.	Laboratory Manual 1807	2360.2.G.7.c
Air Voids (calculated)	Divide the planned production by 1,000. Round the number to the next higher whole number	Laboratory Manual 1808	2360.2.G.7.d
Asphalt Content	Divide the planned production by 1,000. Round the number to the next higher whole number	Laboratory Manual 1853	2360.2.G.7.a
Add AC/Total AC Ratio (calculated)	Divide the planned production by 2000. Round the number to the next higher whole number	Laboratory Manual 1853	2360.2.G.7.a
Adj. AFT (Calculated)	Divide the planned production by 1,000. Round the number to the next higher whole number	Laboratory Manual 1854	2360.2.E.7.e
Gradation	1 gradation per 1,000 tons [900 tonne], or portion thereof (at least one per day)	Laboratory Manual 1203	2360.2.G.7.f
Coarse Aggregate Angularity	2 tests per day for at least 2 days, then 1 per day if CAA is met. If CAA >8% of requirement, 1 sample per day but test 1 per week.	Laboratory Manual 1214	2360.2.G.7.g
Fine Aggregate Angularity (FAA)	2 tests per day for at least 2 days, then 1 per day if FAA is met. If FAA >5% of requirement, 1 sample per day but test 1 per week.	Laboratory Manual 1213	2360.2.G.7.h
Fines to Effective Asphalt Ratio (calculated)	Divide the planned production by 1,000. Round the number to the next higher whole number	Laboratory Manual 1203 & 1853	2360.2.G.7.f & 2360.2.G.7.a
TSR	As directed by the Engineer	Laboratory Manual 1213	2360.G.7.i
Aggregate Specific Gravity	As directed by the Engineer	Laboratory Manual 1204, 1205, and 1815	2360.G.7.j
Mixture Moisture Content	Daily unless otherwise required by the Engineer	Laboratory Manual 1805	2360.G.7.k
Asphalt Binder	Sample first load (each grade), then 1 per 250,000 gal sample size 1 qt [1,000,000 L]	Mn/DOT Bituminous Manual 5-693.920	2360.G.7.l

**G.7 Production Tests**

**G.7.a Asphalt Binder Content**

Use spot check for determination of asphalt binder content in virgin mixtures only. See the requirements of the Bituminous Manual.

Spotchecks are required only when the Engineer has waived the requirements of 2360.2G8 relating to furnishing a computerized printout of the plant blending control system. A minimum of 1 spotcheck per day per mixture blend is required to determine the new added asphalt binder.

Use an incinerator oven meeting the requirements of the Laboratory Manual Method 1853. Do not use the incinerator oven if the percentage of Class B material is greater than 50 percent within the composite blend, unless the Contractor determines a correction factor approved by the Engineer.

Perform chemical extraction meeting the requirements of Laboratory Manual Method 1851 or 1852.

Use the meter method for determination of asphalt binder content in virgin mixtures only. See the requirements of the Bituminous Manual.

**G.7.b                    Gyratory Bulk Specific Gravity, Gmb**

Use two specimens to determine gyratory bulk specific gravity meeting the requirements of Laboratory Manual Method 1806. Set Gyratory to an internal angle of  $1.16^\circ \pm 0.02^\circ$  according to AASHTO TP 71.

**G.7.c                    Maximum Specific Gravity, Gmm**

Determine maximum specific gravity meeting the requirements of Laboratory Manual Method 1807.

**G.7.d                    Air Voids – Individual and Isolated (Calculation)**

Calculate the individual and isolated air voids meeting the requirements of Laboratory Manual Method 1808. Use the maximum mixture specific gravity and corresponding bulk specific gravity from a single test to calculate the isolated air voids. Use the maximum specific gravity moving average and the bulk specific gravity from a single test to calculate the individual air voids.

Compact gyratory design to  $N_{\text{design}}$  in accordance with Table 2360-7, “Mixture Requirements” for the specified traffic level.

**G.7.e                    Adjusted Asphalt Film Thickness (AFT) (Calculation)**

Calculate the Adj. AFT meeting the requirements of the Laboratory Manual Method 1854.

**G.7.f                    Gradation – Blended Aggregate**

Determine the gradation of blended aggregate sample, from an extracted bituminous mixture, meeting the requirements of Laboratory Manual Method 1203.

**G.7.g                    Coarse Aggregate Angularity**

Test the Coarse Aggregate Angularity (CAA) meeting the requirements of Laboratory Manual Method 1214 to determine the CAA on composite blend from aggregates used in production of hot mix asphalt. Ensure CAA test results meet the requirements in accordance with Table 3139-3.

The Contractor may test mixtures containing virgin aggregates from composite belt samples. Test mixtures containing RAP from extracted aggregates taken from standard production samples. Test the percentage of fractured faces of the composite aggregate blend less than 100 percent twice a day for each mixture blend for at least



two days, then one test per day if the test samples meet the CAA requirements. If the CAA crushing test results are greater than 8 percent of the requirements, take one sample per day and perform one test per week.

Report CAA results on the test summary sheet. The Department may reduce payment in accordance with Table 2360-15, "Reduced Payment Schedule for Individual Test Results," for mixture placed and represented by results below the minimum requirement in accordance with Table 3139-3. The Department will calculate tonnage subjected to reduced payment as the tons placed from the sample point of the failing test to the sampling point where the test result meets the specifications.

#### **G.7.h Fine Aggregate Angularity**

Use Laboratory Manual Method 1813 to test the composite blend from aggregates used in production of asphalt mixtures for Fine Aggregate Angularity (FAA) meeting the requirements of Table 3139-3. The Contractor may test mixtures that contain virgin aggregates from composite belt samples. Test mixtures that contain RAP from extracted aggregates taken from standard production samples. Perform two tests per day for each mixture blend for at least two days to test the percentage of uncompacted voids from the composite aggregate blend, then one test per day if the samples meet FAA requirements. If FAA test results are greater than 5 percent of the requirement, take one sample per day and one test per week.

Report FAA results on the test summary sheet. The Department may reduce payment in accordance with Table 2360-16, "Reduced Payment Schedule for Individual Test Results," for mixture placed and represented by results below the minimums in accordance with Table 3139-3. The Department will calculate tonnage subjected to reduced payment as the tons placed from the sample point of the failing test to the sampling point where the test result meets the specifications.

#### **G.7.i Field Tensile Strength Ratio (TSR) ..... Laboratory Manual Method 1813**

If the Engineer requires sampling and testing of the mixture to verify tensile strength ratio (TSR), both the Contractor and the Department will be required to test these samples within 72 h after sampling. The Contractor shall obtain a sample weighing at least 110 lb [50 kg] and split the sample in half to provide a sample for the Department and the Contractor. Label the Department companion of this split with the following information:

- (1) Date,
- (2) Time,
- (3) Project number, and
- (4) Cumulative tonnage to date.

After the sample is split and labeled, give the Department's companion sample to the Department Street Inspector or Plant Monitor or to the Materials Engineer within 24 h of sampling as directed by the Engineer. Take mixture samples from behind the paver unless the Engineer approves an alternate sampling location. Provide a 6 in [150 mm] specimen for gyratory design. The Contractor may test the sample at a permanent lab site or a field lab site.

When using Option 2, obtain the sample within the first 5,000 ton [4,500 tonne] of plant mixed asphalt produced or by the second day of production, whichever comes first, to verify tensile strength ratio (TSR).

Refer to Table 2360-12, "Mixture Type, Minimum TSR," for the minimum acceptable TSR values for production. Stop production immediately if the material does not meet minimum TSR requirements. Do not resume production until after adding anti-strip to the asphalt binder. Determine the responsible party for the cost of the anti-strip in accordance with the Department and Contractor TSR values in Table 2360-13. If the Department is responsible for the cost of the anti-strip, the Department will only pay for the cost of the anti-strip for mixtures placed on that project. The Department will not pay for delay costs associated with making changes related to this testing.

Table 2360-12 Mixture Type, Minimum TSR			
Traffic Level 2 – 3, %		Traffic Level 4 – 5, %	
Contractor	Mn/DOT	Contractor	Mn/DOT
75	65	80	70

Table 2360-13 Anti-Strip Cost Responsibility			
Gyratory Level	Contractor TSR	Mn/DOT TSR	Responsibility
2 – 3	≥ 75	≥ 65	No anti-strip required
		< 65	Contractor
	< 75	≥ 65	Department
		< 65	Contractor
4 – 5	≥ 80	≥ 70	No anti-strip required
		< 70	Contractor
	< 80	≥ 70	Department
		< 70	Contractor

Take another sample and test within the first 500 ton [450 tonne] after production resumes. Stop production if the re-test fails to meet the minimum specified value. Discuss a proposal to resolve the problem with the Engineer before resuming production. Do not operate below the specified minimum TSR if at least 2 successive tests fail the TSR requirements.

A new sample and retest is automatically required if a proportion changes by greater than 10 percent from the currently produced mixture for a single stockpile aggregate or the Engineer directs the Contractor to sample and retest.

**G.7.j Aggregate Specific Gravity(Gsb) ..... Laboratory Manual Methods 1204, 1205, 1815**

Sample and test aggregate stockpiles to verify aggregate specific gravity if directed by the Engineer in conjunction with the District Materials Engineer. Provide 90 lb [40 kg] representative stockpile samples for each aggregate component. Split samples in half to provide material for both the Department and the Contractor. Label the Department companion with the following information:

- (1) Date,
- (2) Time,
- (3) Project number, and
- (4) Approximate cumulative tonnage to date.

Give the Department companion to the Department Street Inspector or Plant Monitor immediately after splitting or to the Materials Engineer within 24 h of sampling as directed by the Engineer. The Materials Engineer will compare the aggregate specific gravity results to the Contractor's values on the current Mix Design Report. If the results deviate beyond the tolerance in accordance with Table 2360-16, "Allowable Differences between Contractor and Department Test Results," the Materials Engineer will notify the Contractor and issue a new Mix Design Report with the current specific gravity results. Base new mixture placed after receiving notification of new specific gravity values on the Department results. The Engineer will notify the Contractor regarding new specific gravity values. The dispute resolution procedure for aggregate specific gravity is on the Bituminous Office website.

**G.7.k Moisture Content ..... Laboratory Manual Method 1855**

Provide a mixture with moisture content no greater than 0.3 percent. Measure moisture content in the mixture behind the paver or, if approved by the Engineer, in the truck box. Sample and test on a daily basis

unless otherwise directed by the Engineer. Store the sample in an airtight container. Do not perform microwave testing.

Do not provide plant mixed asphalt with a moisture content greater than 0.3 percent.

#### **G.7.1 Asphalt Binder Samples**

Sample the first shipment of each type of asphalt binder, then sample at a rate of one per 250,000 gal [1,000,000 L]. Provide a 1 qt [1.0 L] sized sample. Take samples meeting the requirements of the Bituminous Manual, 5-693.920. The Inspector will monitor the sampling the Contractor performs. Record sample information on an Asphalt Sample Identification Card. Submit the sample to the Central Materials Laboratory. Contact the Department Chemical Laboratory Director for disposition of failing asphalt binder samples.

#### **G.8 Documentation**

Maintain documentation, including test summary sheets and control charts, on an ongoing basis. Maintain a file of gyratory specimen heights for gyratory compacted samples and test worksheets. File reports, records, and diaries developed during the work as directed by the Engineer. These documents become the property of the Department.

Number test results in accordance with the MDR and record on forms approved and provided by the Department.

Send production test results on test summary sheets to the District Materials Laboratory and to other sites as directed by the Engineer by 11 AM of the day following production by facsimile, or e-mail when approved by the Engineer.

Include the following production test results and mixture information on the Department approved test summary sheet:

- (1) Percent passing on all sieves in accordance with Table 3139-2 (including No. 16, No. 30, No. 50, No. 100),
- (2) Coarse and fine aggregate crushing,
- (3) Maximum specific gravity ( $G_{mm}$ ),
- (4) Bulk specific gravity ( $G_{mb}$ ),
- (5) Percent total asphalt binder content ( $P_b$ ),
- (6) New added asphalt binder content,
- (7) Ratio of % new added asphalt binder to total asphalt binder,
- (8) Calculated production air voids ( $V_a$ ),
- (9) Calculated adjusted AFT (Adj. AFT),
- (10) Composite aggregate specific gravity ( $G_{sb}$ ) reflecting current proportions,
- (11) Aggregate proportions in use at the time of sampling,
- (12) Tons where sampled,
- (13) Tons represented by a test and cumulative tons produced,
- (14) Fines to effective asphalt ratio ( $F/A_e$ ),
- (15) Signature Line for Mn/DOT and Contractor Representative,
- (16) Mixture Moisture Content, and
- (17) Mn/DOT verification sample test result.

Submit copies of failing test results to the Engineer on a daily basis.

Provide the Engineer with asphalt manifests or bill of lading's (BOL) on a daily basis.

Provide a daily plant diary, including a description of QC actions taken. Include changes or adjustments on the test summary sheets.

Provide weekly truck scale spot checks.

Provide a Department approved accounting system for mixes and provide a daily and final project summary of material quantities and types.

Provide a final hard and electronic copy of QC test summary sheets and control charts, and density worksheets at completion of bituminous operations on the project to the Engineer.

Provide an automated weigh scale and computer generated weigh ticket. Ensure the ticket indicates the following information:

- (1) Project number,
- (2) Mix designation, including binder grade,
- (3) Mixture Design Report number,
- (4) Truck identification and tare,
- (5) Net mass, and
- (6) Date and time of loading.

Do not include deviations from the minimum information on the computer generated weigh ticket unless otherwise approved by the Engineer in writing.

Continue test summary sheets, charts, and records for a mixture produced at one plant site from contract to contract. Begin new summary sheets and charts annually for winter carry-over projects. Begin new summary sheets and charts when an asphalt plant is re-setup in the same location after it has moved out.

Furnish an electronic printout (long form recordation) from an automated plant blending control system at 20 minute intervals when the plant is producing mixture. The Engineer may waive this requirement if the plant does not have the capability to produce the automated blending control information; however, the Contractor must then perform daily spotchecks to determine percent new asphalt added.

Include the following information on the plant control printout:

- (1) Both the virgin and recycle belt feed rates (tons/hr),
- (2) Feeder bin proportions (%),
- (3) Total % asphalt cement in the mixture,
- (4) Virgin asphalt cement added (%)
- (5) Mixture Temperature °F [°C],
- (6) Mixture code,
- (7) Date and time stamp, and
- (8) Current tons of mixture produced and daily cumulative tons of mixture produced at time of printout.

Provide a daily electronic printout of the plant calibration (SPAN) numbers for each bin and meter.

## **G.9 Control Charts**

Provide control charts and summary sheets computer generated from software approved by the Engineer. The Contractor may use software available at the Bituminous Office. Record the following data on standardized control charts:

- (1) Blended aggregate gradation, include sieves in accordance with Table 3139-2 for specified mixture;
- (2) Percent asphalt binder content ( $P_b$ );
- (3) Maximum specific gravity ( $G_{mm}$ );
- (4) Production air voids ( $V_a$ ); and

(5) Adj. AFT.

Unless otherwise directed by the Engineer, plot individual test results for each test point and connect individual points with a solid line. Plot the moving average for each test variable starting with the fourth test and connect with a dashed line. Plot the Department's QA and verification test results with triangles. Plot the specification JMF limits on the control charts using a dotted line.

#### **G.10 JMF Limits**

Base the production air voids and Adj. AFT on the minimum specified requirements in accordance with Table 2360-7, "Mixture Requirements." Base gradations and asphalt binder content limits on the current Department reviewed Mixture Design Report. Provide gradation control sieves in accordance with Table 3139-2. Refer to the Mixture Design Report for the mixture production targets. JMF limits are the target plus or minus the limits in accordance with Table 2360-14, "JMF Limits (N=4)." Use JMF limits as the criteria for acceptance of materials based on the moving average.

<b>Table 2360-14 JMF Limits (N=4)</b>	
<b>Item</b>	<b>JMF Limits</b>
Adj. AFT	- 0.5
Production air voids, %	$\pm$ 1.0
Asphalt binder content, %	- 0.4
Sieve, % <i>passing</i> :	
1 in [25.0 mm], ¾ in [19.0 mm], ½ in [12.5 mm], ¼ in [9.5 mm], No. 4 [4.75 mm]	Broad band limits
No. 8 [2.36 mm]	Broad band limits
No. 200 [0.075 mm]	Broad band limits

#### **G.11 Moving Average Calculation**

Calculate a moving average as the average of the last four test results. Continue the calculation without interruption, except begin new summary sheets and charts annually for winter carry-over projects and if an asphalt plant is re-setup in the same site after it has been moved out.

#### **G.12 JMF Bands**

JMF Bands are the area between the target, as identified on the Mixture Design Report, and the JMF limits.

#### **G.13 JMF Adjustment**

Begin mixture production with materials within 5 percent of the design proportions and other mixture parameters within the JMF limits in accordance with Table 2360-14, "JMF Limits (N=4)" for gradation, asphalt content, and aggregate proportions meeting the requirements of the reviewed Mixture Design Report. Use all aggregate proportions meeting the requirements of the Mixture Design Report unless the aggregate proportion is 0 percent. The Engineer may waive this requirement if the Contractor provides the District Materials Laboratory with prior documented production data showing how production affects the mixture properties or if the Contractor provides the District Materials Laboratory with a written justification or explanation of material changes since the original mixture submittal.

##### **G.13.a JMF Request for Adjustment**

The Contractor may make a request to the Bituminous Engineer or District Materials Engineer for a JMF adjustment to the mix design if the QC test results indicate a necessary change to achieve the specified properties. Do not use aggregates or materials not part of the original mix design to make adjustments unless

otherwise approved by the Engineer, in conjunction with the District Materials Engineer or the Department Bituminous Engineer.

A Certified Level II Bituminous QM Mix Designer will review the requested change for the Department. If the request meets the design requirements in Table 3139-2, "Aggregate Gradation Broad Bands", Table 3139-3, "Mixture Aggregate Requirements", and Table 2360-7, "Mixture Requirements," the Department will issue a revised Mixture Design Report. Each trial mixture design submittal in accordance with 2360.2.E, "Mixture Design" may have three JMF adjustments per mixture per project without charge. The Department will charge the Contractor \$500 for each additional JMF adjustment requests.

Perform an interactive process with the Engineer before making JMF adjustments. Make JMF adjustments only within the mixture specification gradation design broadbands in accordance with Table 3139-2. Submit a new JMF if redesigning the mixture. Only reduce the JMF asphalt content if the moving average Adj. AFT is 8.5 $\mu$  or more and Individual Adjusted AFT is at least 7.5  $\mu$ .

The department will not allow consecutive requests for a JMF adjustment without production data. Continue calculation of the moving average after the approval of the JMF.

#### **G.13.b JMF Request for Adjustment for Proportion Change > 10%**

If requesting a JMF adjustment for a proportion change greater than 10 percent from the currently produced mixture for a single stockpile aggregate, provide supporting production test data from at least four tests run at an accelerated testing rate of one test per 500 ton [450 tonne] with the adjustment request. The Department will base acceptable verification and approval of the requested JMF on individual and moving average test results in addition to the requirements listed above. Individual test results must be within twice the requested JMF limits for percent asphalt binder, production air voids, and Adj. AFT. Individual gradations must be within the Broad Bands. The moving average values must be within the control limits in accordance with Table 2360-14. Continue to calculate the moving average after the change in proportions.

If the mixture meets the specified quality indicators, the District Materials Laboratory will sign the request for JMF adjustment effective from the point of the proportion change. If the mixture fails to meet the quality indicators, the Department will either reduce the payment or direct the Contractor to remove and replace. Do not make consecutive requests for JMF adjustments without production data.

#### **G.14 Failing Materials**

The Department will base material acceptance on individual and moving average test results. The Department will use isolated test results for acceptance of air voids at the start of mixture production. The Department will consider individual test results greater than two times the JMF bands as failing. The Department will fail moving average test results greater than the JMF limits. Begin new summary sheets annually for winter carry-over projects.

Stop production and make adjustments if the moving average values exceed the JMF limits. Restart production after performing the adjustments and notifying the Engineer. Resume testing at the accelerated rates and for the tests listed in Table 2360-10, "Production Start-Up Testing Rates," for the next 2,000 ton [1,800 tonne] of mixture produced. Continue calculating the moving average after the stop in production.

The Department will consider mixture produced where the moving average of four exceeds the JMF limits as unsatisfactory in accordance with 2360.2.G.14.d, "Moving Average Failure at Mixture Start-Up – Production Air Voids," 2360.2.G.14.e, "Moving Average Failure at Mixture Start-Up – Adjusted AFT," 2360.2.G.14.f, "Moving Average Failure - Production Air Voids," and 2360.2.G.14.g, "Moving Average Failure – Percent Asphalt Binder Content, Gradation, and Adj. AFT."

If the total production of a mixture type for the entire project requires no greater than four tests the Department will accept the material in accordance with 2360.2.G.14.b, "Isolated Failures at Mixture Start-Up –

Production Air Voids,” and 2360.2.G.14.c, “Individual Failure — Gradation, Percent Asphalt Binder, Production Air Voids, and Adj. AFT.”

If the Contractor's testing data fails to meet the tolerances in accordance with Table 2360-9, “Allowable Differences between Contractor and Department Test Results,” the Department will substitute QA and verification data to determine the payment factor.

#### **G.14.a Ratio of New Added Asphalt Binder to Total Asphalt Binder – Acceptance Criteria**

The minimum design ratio of new added asphalt binder to total asphalt binder is 70%. During production the ratio must meet individual and moving average requirements as listed in Table 2360-15, “Ratio of New Added Asphalt Binder to Total Asphalt Binder Acceptance Criteria”. If the individual or moving average ratio drops below the minimum requirement, the Contractor must stop production and make adjustments to correct the process. Restart production only after notifying the Engineer of the adjustments made and the Contractor will conduct 2 spot checks within the next 1,000 tons [907 tonnes] of mixture produced to verify the ratio. The calculation of the moving average will continue after the stop in production.

<b>Table 2360-15</b>	
<b>Ratio of New Added Asphalt Binder to Total Asphalt Binder Acceptance Criteria</b>	
<u>Individual Ratio</u>	<u>Moving Average Ratio</u>
66% Minimum	70% Minimum

#### **G.14.b Isolated Failures at Mixture Start-Up – Production Air Voids**

At the start-up of mixture production, use the first three isolated test results for production air voids before establishing a moving average of four. Calculate isolated production air voids using the maximum mixture specific gravity and the corresponding bulk specific gravity from that single test. After testing four samples and establishing a moving average of four, the Department will base acceptance on individual and moving average production air voids.

The Department will not accept the material if any of the first three isolated test results for production air voids exceeds twice the JMF bands from the target listed on the Mixture Design Report at the start of production. The Department will reduce payment for unacceptable material in accordance with Table 2360-16, “Reduced Payment Schedule for Individual Test Results.” The Department will calculate the quantity of unacceptable material on the tonnage placed from the sample point of the failing test to the sample point when the isolated test result is back within twice the JMF bands. If the failure occurs at the first test after the start of production, the Department will calculate the tonnage subject to reduced payment as described above, including the tonnage from the start of production.

If isolated air voids are no greater than 1.0 percent or greater than 7.0 percent, the Engineer will either reduce the payment or order the material removed and replaced at no additional cost to the Department. The Engineer may require the Contractor to test in-place mixture to better define the removal and replacement limits. The Engineer may require the Contractor to test in-place mixture placed before the failing test result. If the Engineer reduces the payment, the Department will pay for the material at 50 percent of the contract unit price.

#### **G.14.c Individual Failure – Gradation, Percent Asphalt Binder, Production Air Voids, and Adj. AFT**

<b>Table 2360-16</b>	
<b>Reduced Payment Schedule for Individual Test Results</b>	
<u>Item</u>	<u>Pay Factor, % *</u>
Gradation	95
Coarse and fine aggregate crushing	90
Asphalt binder content	90
Production air voids, individual and isolated†	80

Table 2360-16 Reduced Payment Schedule for Individual Test Results	
Item	Pay Factor, % *
* 	Apply the lowest pay factor when using multiple reductions on a single test. Calculate individual air voids using the moving average maximum specific gravity and the bulk specific gravity from that single test.
†	Calculate the isolated air voids from the maximum specific gravity and the bulk specific gravity from that single test. The Engineer will only use isolated void test results for acceptance for the first three tests after mixture production start-up.

The Department will not accept material with individual gradation tests greater than the JMF Broad Bands listed on the Mixture Design Report. The Department will reduce payment for unacceptable material in accordance with Table 2360-16, "Reduced Payment Schedule for Individual Test Results." The Department will reduce payment to all tonnage represented by the individual test.

If the individual test result for adjusted AFT is less than 7.5 $\mu$ , the Department may either reduce payment in accordance with Table 2360-17, "Reduced Payment Schedule for Individual Test Results, Adjusted AFT," or order the material removed and replaced represented by the individual test. This tonnage includes all material placed from the sample point of the failing test to the sample point when the test result meets specification requirements. If the failure occurs at the first test after the start of daily production, the Department will include the tonnage from the start of production that day with the tonnage subject to reduced payment or removal and replacement.

Table 2360-17 Reduced Payment Schedule for Individual Test Results, Adjusted AFT	
Individual Adjusted AFT, $\mu$	Pay Factor, %
$\geq 7.5$	100
7.4 – 7.0	90
6.9 – 6.1	75
$\leq 6.0$	R&R <sup>(*)</sup>
* Remove and replace at no expense to the Department.	

The Department will not accept material if the individual tests for percent asphalt binder content or production air voids exceeds twice the JMF bands from the target listed on the Mix Design Report. The Department will reduce payment in accordance with Table 2360-16, "Reduced Payment Schedule for Individual Test Results." The Department will calculate the material subject to reduced payment as the material placed from the sample point of the failing test until the sample point when the test result is back within twice the JMF limits. If the failure occurs at the first test after the start of daily production, the Department will include tonnage from the start of production that day with the tonnage subjected to reduced payment.

The Department will not accept material if individual air voids are no greater than 1.0 percent or greater than 7.0 percent. Remove and replace unacceptable material at no additional cost to the Department as directed by the Engineer. Test in-place mixture to better define the area to be removed and replaced as directed by the Engineer. Test mixture placed before the failing test result as directed by the Engineer. The Department may reduce payment for unacceptable material at 50 percent of the relevant contract unit price.

#### G.14.d Moving Average Failure at Mixture Start-Up — Production Air Voids

If a moving average failure occurs within any of the first three moving average results after mixture start-up (tests 4, 5, 6), the Department will accept the mixture if the individual air void, corresponding to the moving average failure meets the JMF limits. The Department will not accept material if the individual air void fails to meet the JMF limit. The Department will reduce payment for unacceptable material unless the Engineer determines that the isolated air void corresponding to the individual air void meets the JMF limit. The Department will pay for unacceptable material at 70 percent of the relevant contract unit price. The Department will calculate the quantity of material subject to reduce payment as the tons placed from the sample point of the failing moving average result and corresponding individual air void beyond the JMF limit to the sampling point when the individual



test result is back within the JMF limit. If the failure occurs at the first test after the start of daily production, the Department will include tonnage from the start of production that day with the tonnage subjected to reduced payment.

**G.14.e Moving Average Failure at Mixture Start-Up — Adj. AFT**

The Engineer will calculate the Moving Average (n=4) Adj. AFT during the sixth test after the beginning of mixture production of that specific mixture. The Engineer will include the individual results of calculations for tests No. 3, No. 4, No. 5, and No. 6 with this calculation.

**G.14.f Moving Average Failure — Production Air Voids**

A moving average production air void failure occurs when the individual production air void moving average of four exceeds the JMF limit. The Department will consider the mixture unacceptable and subject to reduced payment. The Department will pay for unacceptable mixture at 70 percent of the contract unit price. The Department will calculate the quantity of mixture subject to reduced payment as the tons placed from the sample point of all individual test results beyond the JMF limits, which contributed to the moving average value that exceeded the JMF limit, to the sampling point where the individual test result meets the JMF limits. If the failure occurs at the first test after the start of daily production, the Department will include the tonnage from the start of production that day with the tonnage subject to reduced payment.

Table 2360-18 Reduced Payment Schedule for Moving Average Test Results	
Item	Pay Factor, % *
Gradation	90
Coarse and fine aggregate crushing	NA (individual failures only)
Adjusted AFT	80
Asphalt binder content	80
Production air voids	70
* Lowest Pay Factor applies when there are multiple reductions on a single test.	

**G.14.g Moving Average Failure - Percent Asphalt Binder Content, Gradation, and Adj. AFT**

The Engineer will consider the mixture unacceptable and subject to reduced payment for mixture properties, including asphalt binder content and gradation, where the moving average of four exceeds the JMF limits. The Department may reduce payment for unacceptable mixture properties in accordance with Table 2360-18, "Reduced Payment Schedule for Moving Average Test Results." The Department will calculate the quantity of material subject to replacement or reduced payment as the tons placed from the sample point of all individual test results beyond the JMF limits, which contributed to the moving average value that exceeded the JMF limit, to the sampling point when the individual test result is back within the JMF limits. If the failure occurs at the first test after the start of daily production, the Department will include the tonnage from the start of production that day with the tonnage subjected to reduced payment.

The Engineer will calculate the Moving Average (n=4) Adjusted AFT during the sixth test after the beginning of mixture production of that specific mixture. The Engineer will include the individual results of calculations for tests No. 3, No. 4, No. 5, and No. 6 with this calculation. The Department will consider material with the Moving Average (n=4) of the Adjusted AFT is less than 8.0  $\mu$  as unsatisfactory and will pay for the material at 80 percent of the relevant contract unit price. The Department will calculate the quantity of material subject to replacement or reduced payment as the tons placed from the sample point of all Individual Adjusted AFT results less than 8.0 $\mu$ , which contributed to the Moving Average value that was less than 8.0 $\mu$ , to the sample point where the Individual Adjusted AFT is at least 8.0 $\mu$ . If the failure occurs at the first test after the start of daily production, the Department will include the tonnage from the start of production that day with the tonnage subject to reduced payment.

**G.14.h Coarse and Fine Aggregate Crushing Failure**

If any CAA or FAA test results does not meet the requirements specified in Table 3139-3, the Department may reduce payment for the placed material in accordance with Table 2360-16, "Reduced Payment Schedule for Individual Test Results." The Department will calculate the quantity of material subject to reduced payment as the tons placed from the sample point of the failing test until the sampling point where the test result meets the specifications. If the failure occurs at the first test after the start of daily production, the Department will include the tonnage from the start of production that day with the tonnage subjected to reduced payment.

### **2360.3 CONSTRUCTION REQUIREMENTS**

#### **A Restrictions**

##### **A.1 Asphalt Release Agents**

Do not use petroleum distillates to prevent adhesion of asphalt mixtures to surfaces of tools and equipment. An asphalt release agent must meet the criteria for "Effect on Asphalt" as described in the most recent Asphalt Release Agent on file in Mn/DOT's Office of Environmental Services.

##### **A.2 Edge Drop Off**

When construction is under traffic, the requirements of 2221.3.D will apply.

##### **A.3 Surge and Storage Bins**

Store the asphalt mixture for no more than 18 h at storage facilities that prevent segregation of the mix and drainage of asphalt from the mix. Maintain the mixture at within 9 °F [5 °C] of the temperature when discharged from the silo or mixer and prevent excessive cooling or overheating.

##### **A.4 Weather Limitations and Paving Date**

Do not perform work within the roadway in the spring until removal of seasonal load restrictions on roads in the vicinity unless otherwise approved by the Engineer. Do not place asphalt mixtures when weather or roadbed conditions are judged unfavorable by the Engineer.

Do not place asphalt pavement final wearing course lift after October 15 north of an east-west line between Browns Valley and Holyoke, or after November 1 south of an east-west line between Browns Valley and Holyoke. The Engineer may waive these restrictions when:

- (1) The Contractor is not placing asphalt mixture on the traveled portion of the roadway,
- (2) The roadway involved is closed to traffic during the following winter, or
- (3) The Engineer provides written direction to place the mixture.

#### **B Equipment**

##### **B.1 Plant**

###### **B.1.a Segregation**

Provide plant mixed asphalt from a plant capable of producing a uniform mix free of segregation.

###### **B.1.b Scales**

Test and calibrate scales in accordance with 1901.

###### **B.1.c Mineral Filler**

Add mineral filler to the mixture using a storage silo equipped with a device to ensure a constant and uniform feed.

**B.1.d Storage Tanks**

Provide storage tanks equipped to heat and maintain the material at the temperatures recommended by the certified asphalt supplier. Place the discharge end of the circulating line below the surface of the asphalt material. Provide agitation for modified asphalt as recommended by the supplier.

Provide an outage table or chart and measuring stick for each storage or working tank. Equip tanks with provisions to take asphalt binder material samples. After delivery of asphalt binder material to the project, do not heat the material at temperatures greater than 350° F [175° C]. Do not store modified asphalt at temperatures greater than the manufacturer's recommendation.

**B.1.e Asphalt Binder Control**

If proportioning asphalt binder material by volume, equip the plant with either a working tank or a metering system to determine asphalt binder content of the mixture.

Provide a working tank with a capacity from 1,000 gal to 2,000 gal [3,800 L to 7,600 L]. Calibrate and supply the working tank with a calibrated measuring stick. The Contractor may connect the tank to a mixing unit and use it only during spot check operations as long as it is available at all times. Return feedback to the working tank during spot check operations.

Provide a metering system with at least one approved asphalt binder flow meter and a asphalt binder pump. Connect the flow meter to the asphalt binder supply to measure and display only the asphalt binder being fed to the mixer unit. Position the meter readout for convenient observation. Provide a means to compare the flow meter readout with the calculated output of the asphalt binder pump. Provide a system to display that shows the accumulated asphalt binder quantity being delivered to the mixer in gallons [liters] or to the nearest 0.001 ton [0.001 tonne]. Calibrate and adjust the system to maintain an accuracy of ±1 percent error for each plant set-up before producing the mixture.

Provide an outage table or chart and measuring stick for each storage or working tank. Equip tanks with provisions to take asphalt binder material samples. After delivery of asphalt binder material to the project, do not heat the material at temperatures greater than 350° F [175° C]. Do not store modified asphalt at temperatures greater than the manufacturer's recommendation.

**B.1.f Dryer**

The Department will not allow unburned fuel in the mix.

**B.1.g Temperature Control**

Equip the plant with enough temperature sensors to ensure temperature control of the aggregate and asphalt binder.

**B.1.h Pollution ..... 1717**

**B.2 Street Equipment**

**B.2.a Paver**

Provide a paver capable of spreading and finishing to widths as shown on the plans and with an operational vibratory screed and automatic screed control to place mix without segregation.

Use an asphalt paver to place the mixture. When necessary, the Contractor may use a motor grader, when approved by the Engineer, to spread mixtures in areas that are inaccessible to a paver or when the quantity of mixture makes it impractical to place with a paver.

Use a shouldering machine to spread the mixture on shoulder surfacing and uniform width widening, when the placement width is too narrow for a paver.

Using a screed or strike-off assembly, produce a finished surface of the required evenness and texture without tearing, shoving, or gouging. For mainline paving, if the paving width is greater than the basic screed, auger and mainframe extensions, which meet manufacturer's recommendations for the paving width, are required unless otherwise directed by the Engineer. The Department will not allow strike-off only extension assemblies for mainline wearing course paving, unless the Engineer directs otherwise.

Equip all pavers with an approved automatic screed control. Sensor-operated devices need to include automatic controls that follow reference lines, or surfaces on one or both sides of the paver as required. Adjust the speed of the paver to produce the best results. A string line is only required if stated in the contract.

Spread all mixtures without segregation to the cross sections shown on the plans. The objective on the leveling layer is to secure a smooth base of uniform grade and cross section so that subsequent courses will be uniform in thickness. The Contractor may spread the leveling layer with a properly equipped paver or, when approved by the Engineer, a motor grader equipped with a leveling device or with other means for controlling the surface elevation of the leveling layer.

Place each course over the full width of the section under construction on each day's run, unless the Engineer directs otherwise.

#### **B.2.b Trucks**

Provide trucks with tight, clean, and smooth truck haul beds. Do not allow mixture to adhere to the truck beds. When directed by the Engineer, provide a cover that extends at least 1 ft [300 mm] over the truck bed sides and attach to tie-downs, if the truck is not equipped with a mechanical or automated covering system.

#### **B.2.c Motor Graders**

Use a motor grader with the following characteristics:

- (1) Self-propelled,
- (2) Equipped with pneumatic tires with a tread depth of  $\frac{1}{2}$  in [13 mm] or less,
- (3) Equipped with a moldboard blade that is at least 10 feet [3 m], and
- (4) With a wheelbase of at least 15 feet [4.5 m].

#### **B.2.d Distributor**

Provide a distributor capable of uniformly applying material up to 15 ft [4.6 m] wide and equipped with the following:

- (1) An accurate volume measuring device with tachometer,
- (2) Pressure gauges,
- (3) Thermometer for measuring temperatures of tank contents,
- (4) Power-operated pump, and
- (5) Full circulation spray bars with lateral and vertical adjustments.

#### **B.2.e Rollers**

Compact each lift of asphalt to the density require in 2360.3.D, "Compaction."

**B.2.e(1) Steel-Wheeled Rollers**

Self-propelled steel wheeled compacting equipment must weigh at least 8 ton [7.3 tonne]. If using vibratory rollers, provide rollers that produce 3,085 lbf per ft [45 kN per m] of width and a vibratory frequency of at least 2,400 vpm using the low amplitude setting. Provide a roller capable of reversing without backlash and equipped with spray attachments for moistening rollers on both sets of wheels.

**B.2.e(2) Pneumatic Tired Rollers**

Self-propelled pneumatic tired compacting equipment must have a compaction width of at least 5 ft [1.5 m] and a gross wheel load force of at least 3,000 lb [13 kN] per wheel for traffic level 2 and level 3 mixtures, 5,000 lb [22 kN] per wheel for traffic level 4 and level 5 mixtures, and, if using vibratory, at least 8 ton [7.3 tonne] total mass. Provide a roller with a tire arrangement that obtains full compaction over the full width with each pass of the roller.

**B.2.e(3) Trench Rollers**

Self-propelled trench rollers must weigh at least 2,960 lb per foot [4,400 kg per meter] of width.

**B.3 Tack Coat**

Apply an asphalt tack coat to the existing asphalt or concrete surfaces, and to the surface of each course or lift constructed, except for the final course or lift, in accordance with 2357. Allow emulsified asphalt tack coats to break, as indicated by a color change from brown to black, before placing subsequent lifts.

Apply the tack coat to contact surfaces of all fixed structures and the edge of the in-place mixture in all course at transverse joints and longitudinal joints.

**C Joints**

**C.1 Construction Joints**

Compact joints to produce a neat, tightly bonded joint that meets surface tolerances as described in 2360.3.E. Transverse and longitudinal joints are subject to the density requirement in accordance with 2360.3.D, "Compaction."

**C.2 Transverse Joints**

Construct a transverse joint, the full width of the paver, at right angles to the centerline when mixture placement operations are suspended. When work resumes, cut the end vertically for the full depth of the layer unless constructing a formed edge as approved by the Engineer.

**C.3 Longitudinal Joint**

Construct the longitudinal joint between strips and parallel to the pavement centerline. In multiple lift construction, construct the longitudinal joints between strips in each lift at least 6 in [150 mm] measured transversely from the longitudinal joints in the previously placed lift. If constructing a wearing course in an even number of strips, place one longitudinal joint on the centerline of the road. When constructing a wearing course in an odd number of strips, locate the centerline of one strip on the centerline of the road, provided that no joint is located in the wheel path area of a traffic lane. The Contractor will align longitudinal joints in multiple lift construction over portland cement concrete pavements directly over the concrete pavement longitudinal joints as approved by the Engineer.

At longitudinal joints formed by placing multiple strips, ensure the adjoining surface is higher but does not exceed  $\frac{1}{8}$  in [3 mm], after final compaction of the previously placed strip. When constructing a strip

adjoining a previously placed strip or a concrete pavement, remove to the longitudinal joint line, any fresh mixture that overlaps a previously placed strip or pavement before rolling.

## D Compaction

After spreading each course, compact in accordance with the maximum density method as described in 2360.3.D.1, unless the ordinary compaction method is called for in the special provisions or as described in 2360.3.D.2, "Ordinary Compaction." Do not allow rollers to stand on the uncompacted mixture or newly rolled pavement with a surface temperature greater than 140 °F [60 °C]. Do not roll with steel-wheeled rollers if rolling produces aggregate that is crushed, cracked, or pulverized or causes displacement of the mixture.

To maintain a true surface, correct the following by removing and replacing the material in the defective areas as directed by the Engineer at no additional cost to the Department:

- (1) Variations such as depressions or high areas, which may develop during rolling operations; and
- (2) Lean, fat, or segregated areas.

When spreading mixtures with a motor grader, compact the mixture with pneumatic tired rollers simultaneously with the spreading operation.

### D.1 Maximum Density

Compact the pavement to at least the minimum required maximum density values in accordance with Table 2360-19, "Required Minimum Lot Density (Mat)," and Table 2360-20, "Longitudinal Joint Density Requirement." Density evaluation will include compacted mat density and compacted longitudinal joint density. Density evaluation will not include longitudinal joint density on lifts with a 1 percent reduced density requirement.

<b>Table 2360-19</b>				
<b>Required Minimum Lot Density (Mat)</b>				
	<b>SP Wear Mixtures*   </b>	<b>SP Non-Wear Mixtures*   </b>	<b>SP Shoulders*   </b>	
			<b>Designed at 3% Voids</b>	<b>Designed at 4% voids</b>
% Gmm	92	93	93	92
* Reduce the minimum by 1 percent on the first lift constructed over PCC pavements.    Reduce the minimum by 1 percent for the first lift constructed on aggregate base (mainline and shoulder), reclaimed or cold in place recycled base courses and first lift of an overlay on roadway with a spring load restriction no greater than 7 ton [6.35 tonne], including shoulders.				

<b>Table 2360-20</b>		
<b>Longitudinal Joint Density Requirement</b>		
<b>Location</b>	<b>Confined Edge of Mat*</b>	<b>Unconfined Edge of Mat   </b>
Long joint wear and shoulder (4% air voids)	89.5	88.1
Long joint non-wear and shoulder (3% air voids)	90.5	89.1
* The Department defines "confined" as the edges of the placed mat abutting another mat, pavement surface, or curb and gutter.    The Department defines "unconfined" or "unsupported" as no abutment on the side of the mat being placed with another mat or pavement surface.		

#### D.1.a Shoulders Greater Than 6 ft [1.8 m]

Unless otherwise shown on the plans or required by the special provisions, compact shoulders wider than 6 ft [1.8 m] paved using the maximum density method. When shoulders are compacted by the maximum

density method and are paved separately from the driving lane, or have a different required minimum density than the driving lane, delineate the lot tonnage placed on the shoulder in separate lots from the driving lanes for the day paving was conducted.

#### **D.1.b Shoulders Equal to or Less Than 6 ft [1.8 m]**

Unless otherwise shown on the plans or required by the special provisions, use the ordinary compaction method in accordance with 2360.3.D.2 to compact a narrow shoulder no wider than 6 ft [1.8 m] paved in the same pass as a driving lane or paved separately. The Department will exclude mixture compacted under ordinary compaction from lot density requirements and from incentive or disincentive payment.

When compacting a narrow shoulder using the maximum density method, compact to densities in accordance with Table 2360-19. If the minimum required density of the shoulder is different than the driving lane, delineate the tonnage placed on the shoulder in separate lots from the driving lane.

#### **D.1.c Echelon Paving**

The Department considers echelon paving, two pavers running next to each other in adjacent lanes, as separate operations.

#### **D.1.d Determination**

Calculate each individual lot's maximum density by averaging the results of the cores within the lot expressed as the percentage of the maximum specific gravity. Test fine graded mix in accordance with Laboratory Manual Method 1810. Test coarse graded mix in accordance with Laboratory Manual Method 1816 when directed by the Engineer. Determination of coarse or fine graded mixtures is based on the percentage of material passing the No. 8 [2.36 mm] sieve as defined in Table 2360-8.

Obtain the maximum specific gravity value for calculating the percentage density for the lot from the maximum gravity values taken from production tests during that day's paving. If the production tests during that day's paving result in only one or two maximum specific gravity values, use the moving average value at that test point. If production tests during that day's paving result in three or more maximum specific gravity values, use the average of those tests alone as indicated above.

#### **D.1.e Timeline**

Complete compaction within 8 h of mixture placement and before obtaining core samples. Only use pneumatic tired or static steel rollers for compaction performed between 6 h and 8 h after mixture placement. Do not reroll compacted mixtures with deficient densities.

#### **D.1.f Stop Production**

If all the lots in a day's production or greater than 50 percent of the lots on multiple days fail to meet the minimum density requirement, stop production, determine the source of the problem, and take corrective action to bring the work into compliance with specified minimum required density.

#### **D.1.g Lot Determination**

<b>Table 2360-21 Lot Determination</b>	
<b>Daily Production, ton [tonne]</b>	<b>Lots</b>
300* – 600 [270* – 545]	1
601 – 1,000 [546 – 910]	2
1,001 – 1,600 [911 – 1,455]	3
1,601 – 2,600 [1,456 – 2,360]	4

Table 2360-21 Lot Determination	
Daily Production, ton [tonne]	Lots
2,601 – 4,600 [2,361 – 4,175]	5
> 4,600 [4,175]	
* If producing no greater than 300 ton [270 tonne] of mix, establish the first lot when the total weight is greater than 300 ton [270 tonne].	
Add one lot for each additional 900 tons [820 tonne] or part thereof.	

#### **D.1.h Mat Density Cores**

Obtain four cores in each lot. Take two cores from random locations as directed by the Engineer. Take the third and fourth cores, the companion cores, within 1 ft [0.3 m] longitudinally from the first two cores. Submit the companion cores to the Engineer immediately after coring and sawing. If the random core location falls on a longitudinal joint, cut the core with the outer edge of the core barrel 1 ft [0.3 m] away laterally from the edge of the top of the mat. Do not take cores for compacted mat density within 1 ft [300 mm] of any longitudinal joint. The Contractor is responsible for maintaining traffic, coring, patching the core holes, and sawing the cores to the paved lift thickness before density testing.

The Engineer may require additional density lots to isolate areas affected by equipment malfunction, heavy rain, or other factors affecting normal compaction operations.

#### **D.1.i Contractor Core Testing**

Take and test cores at least 4 in [100 mm] in diameter at locations determined and marked by the Engineer.

Mark samples with the lot number and core number or letter. Transport the cores to the laboratory daily to prevent damage. Schedule the approximate time of testing during normal project work hours to allow the Engineer to observe the test and to record the saturated surface dry and immersed weight of the cores.

Determine the density by the end of the next working day after compaction. Measure each core three times for thickness before saw cutting. Report the average lift thickness on the core sheet. If placing multiple layers in a single day, saw and separate cores for each layer, test, and report by the end of the next working day. Place and compact mix into the coring hole to restore the surface within 24 h after coring or the Department will fine the Contractor \$100 per working day per lot until restored.

#### **D.1.j Companion Core Testing**

The Department will select at least one of the two companion cores per lot to test for verification. For lots designated as longitudinal joint density lots, the Department will test at least one of the mat density companion cores and at least one of the longitudinal joint density companion cores.

#### **D.1.k Tolerance Comparison**

##### **D.1.k(1) Tolerance Comparison – Individual**

Compare the individual core bulk specific gravities obtained by the Contractor and by the Department. If the bulk specific gravities differ by greater than 0.030, use the Department's bulk specific gravity.

##### **D.1.k(2) Tolerance Comparison – Day's Shrinking Tolerance**

For a second comparison of the cores that pass the individual tolerance criteria, compare the average of the Contractor's bulk specific gravities with the average of the Department's bulk specific gravities.



Determine the tolerance by dividing 0.030 by the square root of the number of samples compared. Use all the Department's results for the day's paving if the cores do not fall within the determined tolerance.

#### **D.1.l                    Recoring**

The Engineer may allow the Contractor to re-core a sample if the sample was damaged in the coring process or damaged in transit to the laboratory through no fault of the Contractor.

#### **D.1.m                    One Percent Reduced Density**

The Department will exclude incentive payments for reduced minimum density in accordance with Table 2360-19, "Required Minimum Lot Density (Mat)." The Contractor may request the Engineer to waive the reduced density requirement and reevaluate the density in accordance with Table 2360-19, "Required Minimum Lot Density (Mat)," including incentives, for all cases except the first lift constructed over concrete pavement. Make the request and obtain approval from the Engineer after the first day's paving and by the end of the third day of paving. If the Engineer approves the request, the normal maximum density will remain in effect for the duration of mixture placement on that lift. The Contractor shall comply with any construction requirements on subsequent lifts.

#### **D.1.n                    Longitudinal Joint Density**

Evaluate longitudinal joint density in one lot per day unless the total daily weight is greater than 5,000 ton [5,000 tonne]. If the total daily weight is greater than 5,000 ton [5,000 tonne], evaluate two lots per day. Randomly select the location to take cores for longitudinal joint density from the mat density core locations. Take six cores at this location. Take cores for longitudinal joint density with the outer edge of the core barrel within 6 in [150 mm] from the edge of the top of the mat for both sides of the mat. Take a companion core 1 ft [0.3 m] longitudinally from each core. Take two cores for mat density at either 2 ft [0.61 m] right or 2 ft [0.61 m] left of the center of the mat the Contractor is paving, regardless of random number generation.

#### **D.1.o                    Imaginary Joint**

An actual longitudinal joint will not exist if pulling the shoulder and driving lane in the same paving pass. Do not cut a core on the imaginary line where a joint would have existed had the shoulder and the drive lane been paved separately.

#### **D.1.p                    Shoulders**

##### **D.1.p(1)                Shoulder – Ordinary Compaction**

If compacting the shoulder under the ordinary density specification, do not take longitudinal joint cores in shoulders. Core at the centerline longitudinal edge cores (6 in [150 mm] from the joint) and at the mat density cores (2 ft [0.61 m] right or left of the center of the paving pass).

##### **D.1.p(2)                Shoulder-Maximum Density Specification**

Core at the following locations:

- (1)      Centerline longitudinal edge cores (6 in [150 mm] from the joint),
- (2)      Mat density cores (2 ft [0.61 m] right or left of the center of the paving pass), and
- (3)      Edge of the shoulder (6 in [150 mm] from the outside edge).

Do not cut cores on the imaginary line at the edge of the shoulder adjacent to the driving lane. Move coring locations on imaginary lines to 6 in [150 mm] inside the edge of the shoulder.

#### **D.1.q                    Payment Schedule**

Table 2360-22 Payment Schedule for Maximum Mat Density			
SP Wear and SP Shoulders (4% Void) Density, %*	SP Non-Wear and SP Shoulders (3% Void), Density, %*	Mat Density Pay Factor A	
		Traffic Level 2 & 3	Traffic Level 4 & 5
≥ 93.6	≥ 94.6	1.03	1.05
93.1 – 93.5	94.1 – 94.5	1.02	1.04
92.0 – 93.0	93.0 – 94.0	1.00	1.00
91.0 – 91.9	92.0 – 92.9	0.98	0.98
90.5 – 90.9	91.5 – 91.9	0.95	0.95
90.0 – 90.4	91.0 – 91.4	0.91	0.91
89.5 – 89.9	90.5 – 90.9	0.85	0.85
89.0 – 89.4	90.0 – 90.4	0.70	0.70
< 89.0	< 90.0	†	†
<p>* Calculate the percent of maximum specific gravity to the nearest tenth.</p> <p>   Payment will only apply if the day's weighted average individual production air voids fall within - ½ percent of the target air void value. Base the weighted average air voids on all the mixture production tests in accordance with 2360.2.G.7, "Production Tests" for the corresponding day and weight by the tons the corresponding test represents.</p> <p>† The Department will pay for the HMA material represented by the lot at 70 percent of the relevant contract unit price, unless a single core density is less than 87.0 percent of the maximum specific gravity (<math>G_{mm}</math>). If a single core density is less than 87.0 percent of <math>G_{mm}</math>, the Engineer will decide if the mixture is subject to removal and replacement or reduced payment at 50 percent of the relevant contract unit price. If the Engineer decides the material needs to be removed and replace, the Contractor will remove and replace the material at no additional cost to the Department. Use additional core samples to determine the limits of the removal and replacement area. Take additional core samples at the same offset from centerline as the original core. If the original low density core was taken within 1½ ft [0.45 m] of an edge of the paver pass, take additional cores at 1½ ft [0.45 m] from the edge of the paver pass. Determine the densities at 50 ft [15 m] intervals both ahead and behind the point of unacceptable core density until finding a point of acceptable core density. If the incremental core density testing extends into a previously accepted lot, remove the unacceptable material. Do not use to the test results to recalculate the previously accepted lot density. Perform additional coring and testing for unacceptable core density at no additional cost to the Department. The Department will calculate the area of unacceptable pavement as the product of the longitudinal limits as determined by the 50 ft [15 m] cores and the full width of the paver pass, laying in the traffic lane or lanes. The Department will exempt shoulders from this calculation unless density failure occurred in the shoulder area. After removing and replacing the unacceptable material, determine the density of the replacement material by averaging the two cores. The Department will pay for the replacement material in accordance with Table 2360-22 or Table 2360-23. The Department will not pay for material removed. The Department will pay for the remainder of the original lot at 70 percent of the relevant contract unit price.</p>			

Table 2360-23*		
1 Percent Reduced Table		
SP Wear and SP Shield (4% Void) Maximum Specific Gravity, %	SP Non-Wear, and SP Shield (3% Void), Maximum Specific Gravity, %	Payment, %
≥ 91.0	≥ 92.0	100
90.0 – 90.9	91.0 – 91.9	98
89.7 – 89.9	90.5 – 90.9	95
89.4 – 89.6	90.0 – 90.4	91
89.2 – 89.3	89.5 – 89.9	85
89.0 – 89.1	89.0 – 89.4	70
< 89.0†	< 89.0	†
<p>* Reduce the minimum by 1 percent for the first lift constructed on aggregate base (mainline and shoulder), reclaimed or cold in-place recycled base courses and first lift of an overlay on a roadway with a spring load restriction (including shoulders) no greater than 7 ton [6.35 tonne]. Reduce the minimum reduced by 1 percent on the first lift constructed on PCC pavements. The Engineer will not waive the reduced density requirement.</p> <p>   Calculate the percent of maximum specific gravity to the nearest tenth.</p> <p>† The Department will pay for the HMA material represented by the lot at 70 percent of the relevant contract unit price, unless a single core density is less than 87.0 percent of the maximum specific gravity (<math>G_{mm}</math>). If a single core density is less than 87.0 percent of <math>G_{mm}</math>, the Engineer will decide if the mixture is subject to removal and replacement or reduced payment at 50 percent of the relevant contract unit price. If the Engineer decides the material needs to be removed and replace, the Contractor will remove and replace the material at no additional cost to the Department. Use additional core samples to determine the limits of the removal and replacement area. Take additional core samples at the same offset from centerline as the original core. If the original low density core was taken within 1½ ft [0.45 m] of an edge of the paver pass, take additional cores at 1½ ft [0.45 m] from the edge of the paver pass. Determine the densities at 50 ft [15 m] intervals both ahead and behind the point of unacceptable core density until finding a point of acceptable core density. If the incremental core density testing extends into a previously accepted lot, remove the unacceptable material. Do not use the test results to recalculate the previously accepted lot density. Perform additional coring and testing for unacceptable core density at no additional cost to the Department. The Department will calculate the area of unacceptable pavement as the product of the longitudinal limits as determined by the 50 ft [15 m] cores and the full width of the paver pass, laying in the traffic lane or lanes. The Department will exempt shoulders from this calculation unless density failure occurred in the shoulder area.</p> <p>After removing and replacing the unacceptable material, determine the density of the replacement material by averaging the two cores. The Department will pay for the replacement material in accordance with Table 2360-22 or Table 2360-23. The Department will not pay for material removed. The Department will pay for the remainder of the original lot at 70 percent of the relevant contract unit price.</p>		

<b>Table 2360-24*</b> <b>Payment Schedule for Longitudinal Joint Density</b> <b>(SP Non-wear and SP Shoulders, 4% Void)</b>					
<b>Longitudinal Joint</b> <b>(Confined Edge)</b> <b>Density, %</b>	<b>Pay Factor B</b> <b>Longitudinal (Confined Edge)</b>		<b>Longitudinal Joint</b> <b>(Unsupported Edge)</b> <b>Density, %</b>	<b>Pay Factor C</b> <b>(Unsupported Edge)</b>	
	Traffic Level 2 & 3	Traffic Level 4 & 5		Traffic Level 2 & 3	Traffic Level 4 & 5
≥ 92.1	1.02†	1.03†	≥ 91.0	1.02†	1.03†
91.6 – 92.0	1.01†	1.02†	90.1 – 90.9	1.01†	1.02†
89.5 – 91.5	1.00	1.00	88.1 – 90.0	1.00	1.00
88.5 – 89.4	0.98	0.98	87.0 – 88.0	0.98	0.98
87.7 – 88.4	0.95	0.95	86.0 – 86.9	0.95	0.95
87.0 – 87.6	0.91	0.91	85.0 – 85.9	0.91	0.91
< 87.0	0.85	0.85	< 85.0	0.85	0.85
* The Department will limit incentive payment for longitudinal joint density to lots with evaluated longitudinal joint densities.    Calculate the percent of maximum specific gravity to the nearest tenth. † Payment will only apply if the day's weighted average individual production air voids fall within - ½ percent of the target air void value. Base the weighted average air voids on all the mixture production tests in accordance with 2360.2.G.7, "Production Tests" for the corresponding day and weight by the tons the corresponding test represents.					

<b>Table 2360-25*</b> <b>Payment Schedule for Longitudinal Joint Density</b> <b>(SP Non-wear and SP Shoulders, 3% Void)</b>					
<b>Longitudinal Joint</b> <b>(Confined Edge)</b> <b>Density, %</b>	<b>Pay Factor B</b> <b>Longitudinal (Confined Edge)</b>		<b>Longitudinal Joint</b> <b>(Unsupported Edge)</b> <b>Density, %</b>	<b>Pay Factor C</b> <b>(Unsupported Edge)</b>	
	Traffic Level 2 & 3	Traffic Level 4 & 5		Traffic Level 2 & 3	Traffic Level 4 & 5
≥ 93.1	1.02†	1.03†	≥ 92.0	1.02†	1.03†
92.6 – 93.0	1.01†	1.02†	91.1 – 91.9	1.01†	1.02†
90.5 – 92.5	1.00	1.00	89.1 – 91.0	1.00	1.00
89.5 – 90.4	0.98	0.98	88.0 – 89.0	0.98	0.98
88.7 – 89.4	0.95	0.95	87.0 – 87.9	0.95	0.95
88.0 – 88.6	0.91	0.91	86.0 – 86.9	0.91	0.91
< 88.5	0.85	0.85	< 86.0	0.70	0.85
* The Department will limit incentive payment for longitudinal joint density to lots with evaluated longitudinal joint densities.    Calculate the percent of maximum specific gravity to the nearest tenth. † Payment will only apply if the day's weighted average individual production air voids fall within ½ percent of the target air void value. Base the weighted average air voids on all the mixture production tests in accordance with 2360.2.G.7, "Production Test" for the corresponding day and weight by the tons the corresponding test represents.					

#### D.1.r

#### Pay Factor Determination

Determine the pay factor in accordance with the following:

- (1) Case 1: Total Pay Factor = (Pay Factor A) × (Pay Factor B) × (Pay Factor C)
- (2) Case 2: Total Pay Factor = (Pay Factor A) × (Pay Factor B) × (Pay Factor B)
- (3) Case 3: Total Pay Factor = (Pay Factor A) × (Pay Factor C) × (Pay Factor C)

Where:

Pay Factor A = Mat density,  
 Pay Factor B = Confined edge density,  
 Pay Factor C = Unsupported edge density.

Use a pay factor of 1.00 for Pay Factor B, Pay Factor C, or both in lots where no cores are taken at the longitudinal joint.

## **D.2 Ordinary Compaction**

Perform ordinary compaction for the following:

- (1) Layers identified in the typical sections with a minimum planned thickness less than 1½ in [40 mm],
- (2) Thin lift leveling,
- (3) Wedging layers,
- (4) Patching layers,
- (5) Driveways, and
- (6) Areas the Contractor cannot compact with standard highway construction equipment.

If using the ordinary compaction method to evaluate density, use a control strip to establish a rolling pattern. Use the rolling pattern to compact the asphalt mixture for the layer on which the control strip is constructed or until constructing a new control strip. The Engineer may waive the control strip requirement in small localized areas or other areas not conducive to its establishment.

### **D.2.a Control Strip**

Construct a control strip at least 395 sq. yd [330 sq. m] and of the same thickness as the lift the control strip represents at the beginning of the work on each lift of each course. Begin compacting immediately after spreading the mixture. Continue compacting until additional roller coverage does not produce appreciable increase in density. Determine densities by means of a portable nuclear testing device or approved alternate and create a growth curve to determine the optimum rolling pattern. Provide documentation of the growth curve to the Engineer. Roll the remainder of that course in accordance with the pattern developed in the test strip for that roller. Provide a new control strip in accordance with the following:

- (1) If using a new JMF with a proportion change greater than 10 percent when compared to the currently produced mixture for a single stockpile aggregate,
- (2) If changing the source of either aggregate or binder, or
- (3) After 10 days of production.

### **D.2.b Equipment**

Use rollers that meet the requirements in 2360.3.B.2.e. Use the same equipment type and weight on the remainder of the pavement course that was used to construct the control strip. Provide at least two rollers. Provide a tandem steel wheeled roller for final rolling. The Contractor may use trench rollers or mechanical tampers to compact areas inaccessible to the conventional type rolling equipment.

### **D.2.c Mixture Temperature**

Refer to Table 2360-26, "Minimum Temperature Control" for the minimum laydown temperatures in all courses of the asphalt mixture as measured behind the paver or spreading machine. Do not pave when the air temperature is less than 32° F [0° C] unless otherwise directed by the Engineer in writing.

<b>Table 2360-26*</b> <b>Minimum Temperature Control</b>				
<b>Air Temperature, °F [°C]</b>	<b>Compacted Mat Thickness, †</b>			
	<b>1 in [25 mm]</b>	<b>1½ in [40 mm]</b>	<b>2 in [50 mm]</b>	<b>≥3 in [75 mm]</b>
32 – 40 [0-5]	—	265 [129]	255 [124]	250 [121]
41 – 50 [6-10]	270 [130]	260 [127]	250 [121]	245 [118]
51 – 60 [11-15]	260 [127]	255 [124]	245 [118]	240 [115]
61 – 70 [16-21]	250 [121]	245 [118]	240 [115]	235 [113]
71 – 80 [22-27]	245 [118]	240 [115]	235 [113]	235 [113]
81 – 90 [28-32]	235 [113]	230 [110]	230 [110]	230 [110]
≥ 91 [33]	230 [110]	230 [110]	230 [110]	225 [107]
* Not applicable if using a Warm Mix Asphalt (WMA) additive or process    Use at least one pneumatic-tire roller for intermediate rolling unless otherwise directed by the Engineer. The Engineer may specify or modify the minimum laydown temperature in writing. † Based on the lift thicknesses shown on the plans.				

## E Surface Requirements

After compaction, the finished surface of each lift shall be reasonably free of segregated, open and torn sections, and shall be smooth and true to the grade and cross section shown on the plans with the following tolerances:

<b>Table 2360-26</b> <b>Surface Requirements</b>		
<b>Course/Location</b>	<b>Description</b>	<b>Tolerance</b>
Leveling/1 <sup>st</sup> lift using automatics	Tolerance also applies to 1 <sup>st</sup> lift placed other than leveling when automatics are used.	½ in [15 mm]
Wear	Tolerance of final 2 lifts from the edge of a 10 foot [3 m] straightedge laid parallel to or at right angles to the centerline.	¼ in [6 mm]
Shoulder Wear, Temporary Wear & bypasses	Tolerance from the edge of a 10 foot [3 m] straightedge laid parallel to or at right angles to the centerline.	¼ in [6 mm]
Transverse joints/construction joints	Tolerance from the edge of a 10 foot [3 m] straightedge centered longitudinally across the transverse joint. Correction by diamond grinding required when directed by the Engineer.	¼ in [6 mm]
Transverse Slope	Tolerance for surface of each lift exclusive of final shoulder wear.	Not to vary by more than 0.4 % from plans.
Distance from edge of each lift and established centerline.	No less than the plan distance or more than 3 inches [75 mm] greater than the plan distance. The edge alignment of the wearing lift on tangent sections and on curve sections of 3 degrees or less can't deviate from the established alignment by more than 1 inch [25 mm] in any 25 foot [7.5 m] section.	See Description
Final wear adjacent to concrete pavements.	After compaction the final lift wear adjacent to concrete pavements must be slightly higher but not to exceed 1/4" [6mm] than the concrete surface.	See Description
Final wear adjacent to fixed structures.	After compaction the final lift wear adjacent to gutters, manholes, pavement headers, or other fixed structures must be slightly higher but not to exceed 1/4" [6mm] than the surface of the structure.	See Description
Finished surface of each lift.	Must be free of segregated and open and torn sections and deleterious material.	See Description

Cut or saw and then remove and replace material placed outside the described limitations at no additional cost to the Department. If the Engineer determines the material can remain in place outside the limits, the Department will pay for the material at a reduced cost of \$10 per sq. yd [\$12 per sq. m]. The Department will consider any single occurrence of material outside the limitations to have a minimum dimension of at least 1 sq. yd [1 sq. m] in any dimension.

In addition to the list the above the pavement surface must meet requirements of 2399 (Pavement Surface Smoothness) requirements.

#### **E.1 Lift Thickness**

After compaction, the thickness of each lift shall be within a tolerance of ¼ in [6 mm] of the thickness shown on the plans, except that, if automatic grade controls are used, this thickness requirement will not apply to the first lift placed. This thickness requirement will not apply to a leveling lift whether or not automatic grade controls are required. The Engineer may require removal and replacement of any part of any lift that is constructed to less than the minimum required thickness, at no additional cost to the Department.

Measure cores taken for density determination for thickness also. Measure each core three times for thickness before sawing. Report the average of these three measurements. Document each lot's average core thickness and submit to the Engineer. If the average of the two Contractor cores exceed the specified tolerance, an additional two cores may be taken in the lot in question. The Engineer will use the average of all core thickness measurements per day per lift to determine daily compliance with thickness specifications.

On that portion of any lift constructed to more than the maximum permissible thickness, the materials used in the excess mixture above that required to construct that portion of the lift to the plan thickness plus ¼ in [6 mm] may be excluded from the pay quantities or at the discretion of the Engineer and at the Contractor's expense may be required to be removed and replaced.

#### **F Asphalt Mixture Production (FOB Department Trucks)**

Produce asphalt mixture for the Department. Load the mixture being produced onto Department furnished trucks at the mixing plant at a time agreed on by the Engineer and Contractor. The Engineer will notify the Contractor of the total quantity of mixture required not less than 2 weeks prior to completion of the final wearing course. The Engineer will not accept the asphalt mixture if it is unsuitable for the intended use.

#### **G Small Quantity Paving**

A MDR is not required for planned project quantities less than 9,000 sq. yd inches (4,500 sq. yd per 2-inch thickness, etc) [191,200 m<sup>2</sup> mm] or 500 ton [450 tonne]. Verify in writing that the asphalt mixture delivered to the project meets the requirements of Table 3139-3 and Table 2360-7, "Mixture Requirements." The Department will obtain samples, as determined by the Engineer, to verify mixture requirements and to perform material acceptance in accordance with 2360.2.G.14.b, "Isolated Failures at Mixture Start-Up — Production Air Voids," 2360.2 G.14.c, "Individual Failure — Gradation, Percent Asphalt Binder, Production Air Voids, and Adj. AFT," and 2360.2.G.14.h, "Coarse and Fine Aggregate Crushing Failure."

#### **2360.4 METHOD OF MEASUREMENT**

When paying for material by weight, the Engineer will measure separately asphalt mixture of each type by weight based on the total quantity of material hauled from the mixing plant. The Engineer will not make deductions for the asphalt materials.

When paying for material by area, the Engineer will separately measure asphalt mixture of each type and for each specific lift by area and by thickness on the basis of actual final dimensions placed.

#### **2360.5 BASIS OF PAYMENT**

The contract unit price for asphalt mixture used in each course includes the cost of constructing the asphalt surfacing and providing and incorporating asphalt binder, mineral filler, hydrated lime. Anti-stripping additives may be permitted or required as indicated in 2360.2.C.

The Department will pay for additives required by the contract at the relevant contract unit price for the mixture. The Department will pay for additives incorporated as directed by the Engineer as extra work in accordance with 1403, "Extra Work."

The Department will apply reduced payment if the mixture includes steel slag as one of the aggregate proportions and the production lab density at the design gyrations at the recommended or established asphalt content is greater than 160 lb per cu. ft [2,565 kg per cu. m]. The Department will pay for the mixture at the contract unit price, calculated as follows:

$$\%Payment = \frac{100 - (100 \times (\text{production\_density\_at\_design\_gyrations} - 160))}{160}$$

$$\left[ \%Payment = \frac{100 - (100 \times (\text{production\_density\_at\_design\_gyrations} - 2,565))}{2,565} \right]$$

If the plans do not show a contract pay item for shoulder surfacing and other special construction, the Department will include payment for the quantities of material used for these purposes in the payment for the wearing course materials.

Complete yield checks and monitor thickness determinations to construct the work as shown on the plans. Use the tolerances for lift thickness in accordance with 2360.3.E, "Surface Requirements" and surface smoothness requirements in accordance with 2399 for occasional variations and not for continuous over-running or under-running, unless otherwise required by the Engineer.

The contract unit price for asphalt mixture production includes the cost of the material and loading onto Department-provided trucks at the mixing plant.

The Department will pay for plant mixed asphalt pavement on the basis of the following schedule:

Item No.:	Item:	Unit:
2360.501	Type SP* Wearing Course Mixture †‡	ton [metric ton]
2360.502	Type SP* Non-Wearing Course Mixture †‡	ton [metric ton]
2360.503	Type SP*    Course Mixture †‡# in [mm] thick,	square yard [square meter]
2360.504	Type SP*    Course Mixture †‡	square yard [square meter]
2360.505	Type SP * Bituminous Mixture for Specified Purpose	ton [metric ton]
2360.506	Type SP * Bituminous Mixture Production	ton [metric ton]
*	Aggregate size Designation, 9.5, 12.5 or 19 as appropriate, see 2360.1.A.3.	
	"Wearing" or "Non Wearing" as appropriate.	
†	Traffic level in accordance with Table 2360-1, "Traffic Levels."	
‡	AC binder grade designation (Table 2360-2).	
#	Lift thickness shown on the plans.	



**Minnesota Department of Transportation Schedule of Materials Control – Introduction Page****(Federal Aid, State Funds, County/Municipal Federal Aid Projects and State Aid Projects)**

This schedule outlines the minimum sampling and testing required for most materials used in highway construction. Some items that are rarely used or materials of recent development are often covered by special provisions and may not be shown on the schedule. For more information regarding contract requirements for testing, please reference the "Standard Specifications for Construction", Specification 1603 Materials: Specifications, Samples, Tests, and Acceptance. When sample sizes required for testing exceed 35 pounds, please submit multiple containers of the material with no individual container weighing more than 35 pounds.

Small quantities of materials may be accepted without sampling and testing. A small quantity is defined as any total quantity, for the whole project, of one material, which is smaller than the minimum quantity required for testing unless modified by the individual material items. These materials shall be from known, reliable sources, perform satisfactorily and meet the requirements for purpose intended. The inspection report (Form 02415) should include a statement to this effect and show the source. Form 2403 may be used to report small quantities of diverse materials from different sources. Form 02415 and Form 2403 (or approved revisions) are referenced in the Schedule of Materials Control for project record documentation and are required to be maintained in the project file.

Where items of small quantity are used in a critical location or significantly influence the safety, performance, strength or durability of major construction items, prior approval for their use without testing must be obtained.

Previously approved materials transferred from another project should be reported on Form 02415. The report should include: type of material, quantities involved, source, and supplier of materials. Whenever possible, include the project number for which the material was originally approved.

If Forms 02415 and 2403 are referenced by form number within the Materials Control Schedule for materials or products received from pre-approved sources, where the field responsibility for acceptance is visual inspection and all information required to complete these forms is contained in other documents in the project file, the use of these forms becomes optional. If these forms are completed and sent to the Project Engineer by off-site inspection personnel from the district or the Office of Materials, they must be retained in the project file.

A telephone Index is included with the Schedule giving the numbers of contact persons if further information is required regarding the various materials. A form index is also included.

A website ([www.dot.state.mn.us/materials.html](http://www.dot.state.mn.us/materials.html)) has been established for the Office of Materials. The contributing units to the Materials Control Schedule from the Pavement Engineering Section are the Bituminous Engineering Unit, the Concrete Engineering Unit, and the Grading & Base Unit. The Department maintains the Approved/Qualified Products List and the Certified Products and Services List, as well as, the Materials Control Schedule.

Products manufactured offsite may be pre-approved; however, final acceptance will be made at the point of incorporation, based upon review of documentation and inspection for shipping or other damage.

Contact the Mn/DOT District Independent Assurance Inspector when project starts to provide the proper servicing of your project.

**Index**

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**Certifications List**

<b>Material</b>	<b>Section</b>	<b>Sub Section</b>	<b>Page</b>	<b>Certification Needed</b>
Bituminous mixture	II. Bituminous	Many	12-17	All Bituminous from certified Supplier <a href="http://www.dot.state.mn.us/materials/bituminous.html">www.dot.state.mn.us/materials/bituminous.html</a>
Shingles	II. Bituminous	2	13	Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.
Bituminous Material	II. Bituminous	9	16	Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources can at <a href="http://www.dot.state.mn.us/products">http://www.dot.state.mn.us/products</a>
Emulsions	III. Seal Coat		19	Use Emulsion for seal coat from a certified source.
Emulsions	III. Seal Coat		19	Use Emulsion for Fog Seal from a certified source.
Emulsions	III. Micro surfacing		20	Use Asphalt Emulsion from a certified source.
Emulsions	III. Micro surfacing		20	Use Micro surfacing Emulsion from a certified source.
Emulsions	III. Micro surfacing		20	Use Fog Seal Emulsion from a certified source.
Concrete Ready Mix	IV. Concrete	Many	21-34	Contact Report from Ready-Mix Plant. All concrete from certified plant including a computerized certificate of compliance with each load.
Ground Granulated Blast Furnace Slag Fly Ash Admixtures Cement	IV. Concrete		22	Concrete Plant Batching Materials: All materials must come from certified or approved sources. All certified sources must state so on the Bill of Lading Delivery invoice including Mn/DOT standardized certification statement for cement, flyash, and slag. The most current list of certified/approved sources can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a> .
Air Content	IV. Concrete ready-mix for concrete paving		26	Certificate of Compliance.
Plastic for Curing	IV. Concrete		29	A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.

**Certifications List (cont.)**

<b>Material</b>	<b>Section</b>	<b>Sub Section</b>	<b>Page</b>	<b>Certification Needed</b>
Aggregate for Low Slump Overlays	IV. Concrete		32	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Profiler	IV. Concrete		32	Contractor provides Mn/DOT certified Inertial Profiler Results for bumps/dips and/or Areas of Localized Roughness for the entire project.
Aggregate for Concrete Pavement Repair	IV. Concrete		33	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Aggregate for Dowel Bar Retrofits	IV. Concrete		34	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Plant Stock & Landscape Materials	V: Landscaping etc.	2	35	Several certifications
Silt Fence	V: Landscaping etc.	5	36	Certificate of Compliance with MARV values
Flotation Silt Curtain	V: Landscaping etc.	6	36	Manufacturers' certification
Mulch Type 3	V: Landscaping etc.	14A	36	Certified Vendor by Minnesota Crop Improvement Association must be tagged grain straw only on label.
Mulch Type 6 Wood Chips	V: Landscaping etc.	14B	37	Emerald Ash Borer Compliance Agreement with the MDA
Seeds	V: Landscaping etc.	15A	37	Official guaranteed seed analysis labeled on containers in addition to seed tag.
Seeds - Native	V: Landscaping etc.	15B	37	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Sod	V: Landscaping etc.	16	37	A certificate of Compliance for type of sod listing grass varieties.
Compost	V: Landscaping etc.	17A	37	A/QPL with certified test reports.
Waterproofing material membrane waterproof system	VI: Chemical Items		38	Certificate and test results
Waterborne latex traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Epoxy traffic paint	VI: Chemical Items		39	Certificate of Compliance
Traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Non-traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Bridge structural steel paint	VI: Chemical Items		40	Certificate of Compliance
Exterior masonry paint	VI: Chemical Items		40	Certificate of Compliance
Noise wall stain	VI: Chemical Items		40	Certificate of Compliance
Drop-on glass beads	VI: Chemical Items		40	Certificate of Compliance
Pavement marking tape	VI: Chemical Items		40	Certificate of Compliance
Steel sign posts	VII: Metallic	2	42	Certification of domestic source if applicable under 1601.
Posts for traffic or fence	VII: Metallic	3A	42	Certification of domestic source if applicable under 1601. For fence: fence certification form.
Fence components	VII: Metallic	3B	42	Fence certification form.
Fence gates	VII: Metallic	3C	42	Fence certification form.
Fence barbed wire fabric	VII: Metallic	3D	42	Fence certification form.
Fence woven wire fabric	VII: Metallic	3E	42	Fence certification form.
Fence chain link wire fabric	VII: Metallic	3F	43	Fence certification form.
Reinforcing steel uncoated bars	VII: Metallic	5A	43	Certificate of Compliance & certified mill analysis
Reinforcing steel epoxy bars	VII: Metallic	5B	44	Inspected tag or Certificate of Compliance & certified mill analysis

**Certifications List (cont.)**

<b>Material</b>	<b>Section</b>	<b>Sub Section</b>	<b>Page</b>	<b>Certification Needed</b>
Steel Fabric	VII: Metallic	5E	44	Certificate of Compliance
Dowel Bars	VII: Metallic	5F	44	Certificate of Compliance
Pre or post tensioning strand	VII: Metallic	5G	45	Mill analysis
Anchor rods & bolts	VII: Metallic	7	45	Yearly Mn/DOT passing test report
Timber & lumber	VIII: Miscellaneous	1	47	Certified on invoice
Elastomeric bearing pad	VIII: Miscellaneous	4	47	Certificate of Compliance
Corrugated metal pipe	IX: Geosynthetics & Pipe	1A	47	Certified on invoice
Corrugated metal structural plate	IX: Geosynthetics & Pipe	1B	47	Certified on invoice
Corrugated metal aluminum plate	IX: Geosynthetics & Pipe	1C	48	Fabricator's Certificate and guarantee
Concrete pipe & manholes reinforced	IX: Geosynthetics & Pipe	3A	48	Certified stamp and certification document
Concrete pipe non reinforced	IX: Geosynthetics & Pipe	3B	48	Certified stamp and certification document
Prestressed box culverts	IX: Geosynthetics & Pipe	4A	49	Stamped & field inspection report
Precast beams & posts, etc	IX: Geosynthetics & Pipe	4B	49	Stamped & field inspection report
Manholes & catch basins	IX: Geosynthetics & Pipe	5	50	Certification document or stamped
Thermal plastic pipe ABS & PVC	IX: Geosynthetics & Pipe	7	50	Certificate of Compliance
Corrugated PE Pipe: Single wall – edge drains	IX: Geosynthetics & Pipe	8	50	Certificate of Compliance
Corrugated PE Pipe: dual wall – 12"-48"	IX: Geosynthetics & Pipe	13	51	Certificate of Compliance
Geotextile fabric	IX: Geosynthetics & Pipe	14	52	Manufacturers' Certification of compliance
Brick sewer concrete	X: Brick, Stone, Masonry	1B	53	Air content statement
Concrete masonry units	X: Brick, Stone, Masonry	2A	53	Air content statement
Light standards	XI: Electrical & Signal	1	54	Certificate of Compliance
Cable & Conductors	XI: Electrical & Signal	7B	55	Usually inspected at the distributor. Documentation showing project number, reel number(s), & Mn/DOT test number(s) will be included with each project shipment. If not received from Contractor, submit sample for testing along with manufacturers' material certification.
Electrical systems	XI: Electrical & Signal	10	56	Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.
Traffic signal systems	XI: Electrical & Signal	11	56	Traffic Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.

**Telephone Index for Schedule of Materials Control**

Section	Page	Section Name	Contact	Phone
Part I	Page 7	Grading & Base	Tim Andersen Cary Efta Rebecca Embacher	(651) 366-5455 (651) 366-5421 (651) 366-5525
Website: <a href="http://www.dot.state.mn.us/materials/gradingandbase.html">www.dot.state.mn.us/materials/gradingandbase.html</a>				
Part II	Page 12	Bituminous - Spec. 2360	John Garrity	(651) 366-5577
Part II B 4	Page 14	Asphalt Binder	Jim McGraw Jason Szondy	(651) 366-5548 (651) 366-5549
Website: <a href="http://www.dot.state.mn.us/materials/bituminous.html">www.dot.state.mn.us/materials/bituminous.html</a>				
Part III	Page 18	Seal Coating – Spec 2356	Erland Lukanen Tom Wood	(651) 366-5460 (651) 366-5573
Part IV	Page 21	Concrete – Aggregates and Mix Design Concrete – Certified Ready Mix Concrete Paving Concrete – Bridges	Wendy Garr Wendy Garr Maria Masten Ron Mulvaney	(651) 366-5423 (651) 366-5423 (651) 366-5572 (651) 366-5575
Website: <a href="http://www.dot.state.mn.us/materials/concrete.html">www.dot.state.mn.us/materials/concrete.html</a>				
Part V	Page 35	Landscaping and Erosion Control Items Erosion Control Landscaping Wood Chips	Lori Belz Scott Bradley Paul Walvatne	(651) 366-3607 (651) 366-4612 (651) 366-3632
Part VI	Page 38	Chemical Items	Jim McGraw Dave Iverson	(651) 366-5548 (651) 366-5550
Part VII	Page 41	Metallic Materials and Metal Products Sampling Test Results Bridge Structural Metals	Terry Beaudry Laboratory Todd Niemann Barry Glassman	(651) 366-5456 (651) 366-5560 (651) 366-4567 (651) 366-4568
Part VIII	Page 47	Miscellaneous Materials Sections 1 thru 3 Section 4  Test Results	Terry Beaudry Todd Nieman Barry Glassman Laboratory	(651) 366-5456 (651) 366-4567 (651) 366-4568 (651) 366-5560
Part IX	Page 47	Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete Sections 1 thru 5 and 8 thru 11, & 13 Sections 6, 7 Section 12 Section 14 Test Results	Steve Grover Terry Beaudry Rich Lamb Randy Tilseth Laboratory	(651) 366-5540 (651) 366-5456 (651) 366-5595 (651) 366-5451 (651) 366-5560
Part X	Page 53	Brick, Stone and Masonry Units/Modular Retaining Wall Blocks Sections 1, 2A & 4 Section 2B Section 3 Test Results	Terry Beaudry Blake Nelson Steve Grover Laboratory	(651) 366-5456 (651) 366-5599 (651) 366-5540 (651) 366-5561
Part XI	Page 54	Electrical & Signal Sections 1, 8-11 Section 2 Section 3 Sections 4-7 Test Results	Susan Zarling Steve Grover Wendy Garr Terry Beaudry Laboratory	(651) 234-7052 (651) 366-5540 (651) 366-5423 (651) 366-5456 (651) 366-5560

**Form Index**

<b>Grading and Base</b>	
<b>Form No.</b>	<b>Form Name</b>
02115-03	Grading & Base Report
02154-02	Random Sampling Gradations
2170-02	Penetration Index Method - Aggregate Base & Edge Drains
02402-03	Work Sheet for Sieve Analysis of Granular Material
02463	Percent Crushing Report
24346-02	Certificate of Aggregates & Granular Materials
24587-01	Calculation for Moisture - Density Relationships in Subgrade Soils and Aggregate Base and Shoulders
<b>Concrete</b>	
<b>Form No.</b>	<b>Form Name</b>
2152	Concrete Batching Report
2162	Concrete Test Beam Data
2409	ID Card Concrete Test Cylinder
2448	Weekly Concrete Report
2449	Weekly Concrete Aggregate Report (QC/QA)
21412	Weekly Report of "Low Slump Concrete"
21763	Concrete Aggregate Worksheet
21764	Concrete Aggregate Worksheet JMF
24143	Weekly Certified Ready-Mix Plant Report (Verification)
24300	ID Card Cement Samples
24308	ID Card Fly Ash Samples
24327	Field Core Report
	Microwave Oven Worksheet
	Incentive/Disincentive Smoothness Worksheet
<b>Bituminous</b>	
<b>Form No.</b>	<b>Form Name</b>
2413	Asphalt Sample Identification Card
<b>Miscellaneous</b>	
<b>Form No.</b>	<b>Form Name</b>
2410	Sample ID Card
02415	Inspection Report on..... (May be used for documentation or use another method to capture required documentation)
2403	Inspection Report for Small Quantities (May be used for documentation or use another method to capture required documentation)
	Certification Form for Type of Fence used, see on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>

I. Grading and Base Construction Items ([www.dot.state.mn.us/materials/gradingandbase.html](http://www.dot.state.mn.us/materials/gradingandbase.html))

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2118 (b) 2211 (c) 2221	1. Gradation (a) Aggregate Surfacing (b) Aggregate Base (c) Aggregate Shoulders	3138 & Special Provisions	02115-03, 02154-02, & 24346-02	1/1,000 ton	1/1,000 t	Random Sampling Individual Tests 275 yd <sup>3</sup> to < 2,200 yd <sup>3</sup> (CV) 1 test /550 yd <sup>3</sup>  Average Lots 2,200 yd <sup>3</sup> to 5,500 yd <sup>3</sup> (CV) 4 tests/Lot (See Note 2 & 8)	Random Sampling Individual Tests 230 m <sup>3</sup> to < 1,840 m <sup>3</sup> (CV) 1 test /460 m <sup>3</sup>  Average Lots 1,840 m <sup>3</sup> to 4,600 m <sup>3</sup> (CV) 4 tests/Lot (See Note 2 & 8)	50 lb	25 kg	1 per source 10-15 kg or 30 lb  (Salvage Bit. See Note 3)
		3149 & Special Provisions								
(d) 2105	(d) Stabilizing Aggregate									
(e) 2211	(e) Open Graded Aggregate Base (OGAB)	Special Provisions	02115-03, 24346-02, & 02402-03	4 per source before placing on project		1/1,000 ton or 1/550 yd <sup>3</sup> (CV) (See Note 2)	1/1,000 t or 1/460 m <sup>3</sup> (CV) (See Note 2)	50 lb	25 kg	1 per source 10-15 kg or 30 lb
(f) 2105	(f) Granular Borrow Select Granular Borrow	3149 & Special Provisions								Less than 100,000 yd <sup>3</sup> 2/source More than 100,000 yd <sup>3</sup> 4/source
(g) 2331	(g) Full Depth Reclamation (FDR)	Special Provisions	02115-03 & 02402-03	1/6,000 yd <sup>2</sup>	1/5,000 m <sup>2</sup>	1/12,000 yd <sup>2</sup>	1/10,000 m <sup>2</sup>	None	None	None
(h) 2511	(h) Granular Filter	3601 & Special Provisions	02115-03, 24346-02, & 02402-03	1 per source before placing on project		1 per source (See Note 2)		300 lb	136 kg	1 per source 68 kg or 150 lb

## I. Grading and Base Construction Items (cont.)

2. Grading and Base Construction Items (Cont.)										
Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(i) 2451 (j) 2451 (k) 2451 (l) 2451	(Continued) <b>1. Gradation</b> (i) Granular Backfill (j) Aggregate Backfill (k) Granular Bedding (l) Aggregate Bedding	3149 & Special Provisions	02115-03, 24346-02, & 02402-03	2 per source before placing on project		1 per source  (See Note 2)		50 lb	25 kg	1 per source 10-15 kg or 30 lb  (Salvage Bit. See Note 3)
(m) 2451 (n) 2502 (o) 2206	(m) Coarse Filter Aggregate (n) Fine Filter Aggregate (o) Sand Cover									1 per source 10-15 kg or 30 lb
(a) 2211 (b) 2221	<b>2. Moisture – Density Test</b> (Required for Specified Density) (Proctor) (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	24587-01	Contractor is encouraged to perform additional tests for process control.		1/22,000 yd <sup>3</sup> (per source)	1/18,000 m <sup>3</sup> (per source)	50 lb	25 kg	One sample minimum  12 kg or 25 lb
(c) 2105	(c) Embankment Soil (Excavation & Borrow)					1 per major soil				Two samples minimum  12 kg or 25 lb
(a) 2211 (b) 2221	<b>3. Relative Density Test</b> (Required for Specified Density) (a) Aggregate Base (b) Aggregate Shoulder	2211 & Special Provisions	02115-03 & 02140-03	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd <sup>3</sup> (CV)	1/800 m <sup>3</sup> (CV)	None	None	None
(c) 2105	(c) Embankment Soil (Excavation & Borrow)					1/4,000 yd <sup>3</sup> (CV)	1/3,000 m <sup>3</sup> (CV)			



## I. Grading and Base Construction Items (cont.)

A. Grading and Base Construction Items (Cont.)										
Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2211 (b) 2221	<b>4. Penetration Index Method (DCP)</b> (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 02170-02	Contractor is encouraged to perform additional tests for process control.		2 DCP tests/1,000 yd <sup>3</sup> (CV)	2 DCP tests/800 m <sup>3</sup> (CV)	None	None	None
		2 DCP tests/6,000 yd <sup>2</sup>				2 DCP tests/5,000 m <sup>2</sup>				
	(c) 2331	(c) Full Depth Reclamation (FDR)	2331 & Special Provisions	See Special Provisions						
(d) 2502	(d) Fine Filter Aggregate (Edge Drains)									
(a) 2211 (b) 2221	<b>5. Modified Penetration Index Method (DCP)</b> (Special Provisions) (a) Aggregate Base (b) Aggregate Shoulder	2211 & 2221	02115-03 & Special Provisions	Contractor is encouraged to perform additional tests for process control.		2 DCP tests/1,000 yd <sup>3</sup> (CV)	2 DCP tests/800 m <sup>3</sup> (CV)	None	None	None
		2 DCP tests/4,000 yd <sup>3</sup> (CV)				2 DCP tests/3,000 m <sup>3</sup> (CV)				
	(c) 2105	(c) Granular Borrow Select Granular Borrow	2105, 3149, & Special Provisions							
(a) 2211 (b) 2221	<b>6. Relative Moisture</b> (Required for Specified Density) (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 21850-02	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd <sup>3</sup> or 10 tests whichever is less	1/800m <sup>3</sup> or 10 tests whichever is less			
		1/10,000 yd <sup>3</sup> (CV)				1/7,500 m <sup>3</sup> (CV)				
	(c) 2105	(c) Embankment Soil (Excavation & Borrow)	2105 & Special Provisions							

## I. Grading and Base Construction Items (cont.)

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2211 (b) 2221	7. Moisture Content, (Dry Weight) (Required for Quality Compaction, Penetration Index Method, & Modified Penetration Method) (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 21850-02	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd <sup>3</sup> or 10 tests whichever is less	1/800m <sup>3</sup> or 10 tests whichever is less	None		None
(a) 2105 2118 2211 2221				One Per Day (See Note 7)		None				
(b) 2105 2118 2211 2221	(b) Particle Count		One Per Source (See Note 7)							
2105 2118 2206 2211 2221 2451 2502	9. Aggregate (Quality Tests)	3138, 3149, & Special Provisions	None	1/source (See Note 9)		None				1 per source 10-15 kg or 30 lb (See Note 4)

**I. Grading and Base Construction Items (cont.)**

**Note 1:** Laboratory samples are not required for 1,000 metric tons [1,000 tons] or less. Conversion Factors are listed in the Mn/DOT Grading & Base Manual under "Conversion Factors in Grading and Base Work".

The first field sample with a laboratory companion must be taken within the first 3,000 metric tons [3,000 tons]. The field sample results must be included with the laboratory sample.

Companion samples are not required when project acceptance testing is done in a laboratory facility that maintain their own independent AMRL accreditation for the test procedure being used. Not all laboratories will do project acceptance testing.

Field-lab tolerances are in the Mn/DOT Grading & Base Manual at: <http://www.dot.state.mn.us/materials/gbmanual.html>

Sieve Analysis Procedure (Gradation)

Sampling for Moisture-Density Test (Proctor)

**Note 2:** Samples are not required for 500 ton or less. Report small quantities on form 02415 or 2403.

**Note 3:** Submit a laboratory companion to the first Acceptance Gradation sample for a bituminous extraction.

**Note 4:** Carbonate aggregate materials require 20 - 25 kg (50 lbs) for the lab.

**Note 5:** Forms are available on the Grading & Base website at:  
<http://www.dot.state.mn.us/materials/gradingandbase.html>

**Note 6:** Minimum Test Size = 1/2 Field Sample Size.

**Note 7:** Percent crushing test will not be required when the material is crushed from a source meeting the requirements of class A or class B in 3137.2B or 3139.2A2.

**Note 8:** Volume to mass conversion:  $1\text{yd}^3\text{ (CV)} = 1.8\text{ tons}$ ,  $1\text{m}^3\text{ (CV)} = 2.2\text{ metric tons}$

In Random Sampling, the Individual Tests are used when the total quantity of each aggregate class is less than 4,000 tons or 2,200 cu. yds. (CV) and the Average Lots are used when the total quantity of each aggregate class is at least 4,000 tons or 2,200 cu. yds. (CV) for the project.

**Note 9:** The Contractor may use the Ignition Oven (Mn/DOT Lab. Manual Method 1853) to determine bitumen content.

**II. Bituminous Construction Items for Specification 2360 (Note #1)**(All bituminous mixtures are from Certified Plants) ([www.dot.state.mn.us/materialsbituminous.html](http://www.dot.state.mn.us/materialsbituminous.html))**DEFINITIONS**

SAMPLE TYPE	DESCRIPTION	SAMPLE LOCATION DETERMINED BY	SAMPLE TAKEN BY	SAMPLE TESTED BY
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor is <u>required</u> to test this sample. The results <u>shall be used</u> as part of the QC program.	Agency	Agency	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

**A. Pre-Production Sampling and Testing for Specification 2360**

**SAMPLE SIZE:** 35 kg (75 lb.) - plus #4 aggregate sample for quality testing and Percent Crushing  
15 kg (35 lb.) - minus #4 aggregate for quality testing  
35 kg (75 lb.) - RAP for Quality Testing  
5 kg (10 lb.) - RAS (Shingles) for Gradation and Quality Testing  
33 kg (70 lb.) - bituminous mixture plus 2 Gyratory specimens for volumetric testing  
35 kg (75 lb.) - bituminous mixture for TSR testing (option A)  
8 kg (18 lb.) - bituminous mixture for TSR testing plus 6 Gyratory specimens (option B)  
1 kg (2 lb.) - for mineral filler.

**1. Bituminous Mix Design (QC/QA)**QC Testing

REMARKS: Mix Design for Spec. 2360 is Contractor's responsibility with review by Mn/DOT.

QA Testing

For Gyratory Design, Option 1- Laboratory Mix Design: In addition to reviewing the Trial Mix data (JMF), test Contractor's two Gyratory specimens and uncompacted mixture (specimens and mixture submitted at optimum asphalt content). Also, evaluate TSR per 2360.3 B3. For option 2, Modified Mix Design, review Trial Mix data only.

For Gyratory Design Option 2, Modified Mix Design, review Trial Mix data only.

**II. Bituminous Construction for Specification 2360 (Part A, cont.)****2. Aggregate Quality Testing (QA Only)**QA Testing

Contractor shall provide 24 hour notice of intent to sample aggregates for quality testing. Agency has the option to monitor sampling.

Contractor submits to the Bituminous Engineer or the District Materials Engineer one (1) sample of each non-asphaltic aggregate type or class per source per year. Contractor shall also submit the asphaltic aggregate material when the mixture contains RAP or RAS.

Quality testing will be performed as directed by the Bituminous Engineer or the District Materials Engineer. When aggregate qualities approach specification limits or when material variation is observed, take additional field samples.

Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.

**3. Mineral Filler (QA Only)**QA Testing

One (1) per shipment of 45 metric tons (50 tons) or less, unless previously inspected.

**4. Additives (QA Only)**QA Testing

1 L (1 qt.) of blended asphalt binder and additive. Sample first shipment of each type of material, then submit one sample per 1,000 m<sup>3</sup> (250,000 gal.) (approximately 1,000 ton).

**B. BITUMINOUS PRODUCTION for Specification 2360 (Note #12)**

**SAMPLE SIZE:** 15 kg (35 lb.) for Aggregate for Gradation (QC/QA)

35 kg (75 lb.) for each plus #4 Aggregate Type for Quality Testing

15 kg (35 lb.) for each minus #4 Aggregate Type for Quality Testing

35 kg (75 lb.) for each RAP material for Quality Testing

5 kg (10 lb.) RAS (Shingles) for Processed Gradation and Quality Testing

30 kg (65 lb.) for Mixture Properties (QC/QA) 3 full 6" by 12" cylinder molds for QA (Gyratory mixes)

40 kg (90 lb.) for TSR (QC/QA) 4 full 6" by 12" cylinder molds for QA

40 kg (90 lb.) for Aggregate Specific Gravity (QC/QA)

1 L (1 qt) for Asphalt Binder (QA)

2 L (½ gal) for Asphalt Emulsion (QA)

**1. Plant Mix Aggregate Gradation Testing (QC/QA, Verification\*)**QC Testing

1 per 450 metric tons (500 tons) at start of production, for the first 1,800 metric tons (2,000 tons) of mixture produced, then

1 per 900 metric tons (1,000 tons) or portion thereof per mix blend as required by 2360.4E6

Companion samples taken for agency.

REMARKS: See Note #2, Note #3, & Note #5.

QA Testing

Companions to QC samples set aside for 10 calendar days & tested as needed. The Agency representative observes QC testing as needed.

**2. Aggregate Percent Crushing (QC/QA, Verification\*)**QC Testing

Testing rates as required by 2360.4E7 CAA, 2360.4E8 FAA. Two tests per day (CAA, FAA) for first two days. If CAA results exceed the specification minimum by 8% of the requirement; sample daily, test minimum one per week. If FAA results exceed the specification minimum by 5% of the requirement; sample daily, test minimum one per week.

REMARKS: See Note #2, Note #3, & Note #4

QA Testing

Companions to QC samples set-aside for 10 calendar days and tested as needed. The Agency representative observes QC testing as needed.

**3. Aggregate Quality Testing (QA Only)**QA Testing

When aggregate qualities approach specification limits or when material variation is observed, take additional field samples as requested by Project Engineer.

When material variation is observed in RAP or RAS take additional field samples as requested by Project Engineer.

**II. Bituminous Construction for Specification 2360 (cont.)****B. Bituminous Production for Specification 2360 (cont.)****4. Asphalt Binder Content, % (QC/QA, Verification)**QC Testing

1 per 450 metric tons (500 tons) per mix blend for first 1,800 metric tons (2,000 tons) of mixture produced. Then 1 per 900 metric tons (1000 tons) or portion thereof per mix blend as required by 2360.4E6

REMARKS: See Note #5.

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| (a) Meter Method (Virgin only)..... | Mn/DOT Bituminous Manual              |
| (b) Incinerator Oven.....           | Mn/DOT Lab Manual Method 1853         |
| (c) Chemical Extraction.....        | Mn/DOT Lab Manual Method 1851 or 1852 |
| (d) Spot Check (Virgin only).....   | Mn/DOT Bituminous Manual 5-693.848    |

REMARKS: The verification companion sample must use Method (b) or (c) only. When more than one Mn/DOT approved test procedure is available, the Contractor shall select one method at the beginning of the project (when material is submitted for Trial Mix Review) and use that method for the entire project. The Contractor and Engineer may agree to change test procedures during the construction of the Project.

REMARKS: See Note #2 & Note #3. If a member of a monitoring team observes the Contractor test, note and sign under remarks.

REMARKS: For mixtures containing Shingles see Note #7.

QA Testing Companions to QC samples set aside for 10 calendar & tested as needed. The Agency representative observes QC testing as needed.

**5. Mixture Properties (QC/QA, Verification\*)**

Maximum Specific Gravity, Gyratory Bulk Specific Gravity - 2 Specimen Average, air voids, Adjusted Asphalt Film Thickness (AFT), asphalt binder content, and gradation.

REMARKS: See Note #8 Asphalt Film Thickness (AFT)

QC Testing

1 per 450 metric tons (500 tons) per mix blend, at the start of production, for first 1,800 metric tons (2,000 tons) of mixture produced. Determine planned tonnage for each mixture to be produced during the production day. Divide the planned production by 1,000; round up to the next higher whole number. This number will be the number of production tests required for that mixture. Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day.

REMARKS: See Note #2, Note #3, & Note #11.

QA Testing

Companion samples to QC samples set aside for 10 calendar days and tested as needed. The agency representative shall review QC operations on a daily basis. Review shall include but is not limited to monitoring QC summary sheets and comparing allowable tolerances for verification sample/verification companion sample test results. The Agency representative shall observe either 1 QC test per week (during production) or 1 QC test per 10,000 tons, whichever results in more frequent observations.

\*Verification Testing

Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day. The verification companion shall also be tested for CAA and FAA at a rate of 1 test per week, if the CAA and FAA exceed the requirements by 8% and 5% respectively, otherwise test daily.

An Agency representative will take 1 verification sample per mixture blend per day for Mn/DOT laboratory testing. A verification companion sample will be given to contractor for QC testing.

**II. Bituminous Construction for Specification 2360****B. Bituminous Production for Specification 2360 (cont.)****6. Core Density and Thickness**QC Testing**Production/lot testing rate requirements.**

Daily Production		Lots
Metric Ton	English (ton)	
270* – 545	(300* – 600)	1
546 – 910	(601 – 1000)	2
911 – 1455	(1001 – 1600)	3
1456 – 3275	(1601 – 3600)	4
3276 – 4545	(3601 – 5000)	5
4546 +	(5001 +)	6

\*When mix production is less than 270 metric tons (300 tons), establish 1<sup>st</sup> lot when accumulative tonnage exceeds 270 metric tons (300 tons).

Core locations determined and marked by Agency. Companion cores are required for each Contractor density core. The Contractor shall schedule the approximate time of testing during normal project work hours so that the Agency may observe and record the saturated surface dry and immersed weight of the cores.

REMARKS: Sawing of cores into separate lifts is required. Contractor is required to have a saw capable of separating the core lifts without damaging the material. See Note #10 for Longitudinal joint density cores.

QA Testing

Core locations determined and marked by Agency. Agency representative observes all Contractor coring, measuring, sawing and testing, and takes possession of Agency cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

Remarks: See Note #6, Note #10, and Note #11

**7. Aggregate Specific Gravity (QC/QA)**

QC Sampling: Sampled and tested by Contractor, if requested by District Materials Engineer.

QA Testing: Companion sample to QC sample shall be submitted to the District Materials Lab and tested as needed.

**8. Tensile Strength Ratio (T.S.R.) (QC/QA)**QC Sampling

Sample as directed by the District Materials Engineer. If the District Materials Engineer requires the samples to be tested, both the Contractor and the Department will be required to test these samples within 72 hours after they are sampled.

QA Testing

When QC sampling is required, the companion sample to QC sample shall be submitted to the District/Division Materials Lab and tested as needed.

**II. Bituminous Construction Items for Specification 2360****B. Bituminous Production for Specification 2360 (cont.)****9. BITUMINOUS MATERIALS**

Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources can at <http://www.dot.state.mn.us/products>

SAMPLE SIZE: 1 L (1 qt) for Asphalt Binder (QA)

2 L (½ gal) for Asphalt Emulsion (QA)

Pay Item No.	Material	Spec. No.	Quality Control (QC)	Quality Assurance (QA)	Form No.
2360	Asphalt Binder	3151.2A	QC testing is the responsibility of the bituminous material supplier. Random sampling is arranged by the Mn/DOT Chemical Laboratory.	State inspector observes contractor personnel taking sample. Sample first shipment of each grade of material at the start of a plant's production or after set-up of a portable plant. Thereafter, submit one sample per 1,000,000 liters (250,000 gal). Sample asphalt binder in clean one L (qt) steel container.	2413 Asphalt Sample Identification Card
2201 2321 2355 2356 2357 2514	Asphalt Emulsion	3151.2C		Sample first shipment, then submit one sample per 200 m <sup>3</sup> ((50,000 gal.). Sample asphalt emulsion in clean two L (2 qt.) plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab within 7 days of sampling.	
2321 2357 2358 2514	Cutback Asphalt	3151.2B		Cutback Asphalt should only be used in cold temperature applications with the Engineer's approval. Contact Bituminous Engineering Unit for cold temperature application guidelines. Pressure fit 1 L (1qt.) cans for cutback asphalt.	

**10. Moisture Content in Mixture (QC only)****QC Testing**

Sampling and testing shall be conducted by the Contractor on a daily basis unless exempted by the Engineer and tested according to the procedures in the Bituminous Manual (5-693.950). Moisture contents above 0.3% are not allowed.

**Note #1** Projects with bituminous tonnage less than or equal to 272 metric tons (300 tons) per day may be accepted on a small quantity basis at the discretion of the Engineer. Retain Form 02415 or Form 2403 in Project File.



**II. Bituminous Construction for Specification 2360****B. Bituminous Production for Specification 2360 (cont.)**

**Note #2** All QA test samples shall be from split samples.

If a member of the monitoring team observes the Contractor Test, note and sign under remarks.

The Project Engineer is responsible for:

- 1.) Reviewing control charts & Test summary sheets for accuracy and completeness,
- 2.) Checking sampling and testing procedures,
- 3.) Discussing QC problems with the Contractor,
- 4.) Obtaining Verification Samples,
- 5.) When additional testing is necessary, collect QA samples which have been acquired and retained by the Contractor and/or additional verification samples.

**Note #3** For process control testing, acceptance will be based on Contractor's test results as verified by Mn/DOT test results.

**Note #4** Bituminous mixes composed entirely of Class A and/or Class B aggregates are not required to be tested for CAA (Coarse Aggregate Angularity).

**Note #5** When the required sampling rate is one test per 500 tons, divide the bituminous mixture production planned for the day by 500, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 1000 tons, divide the bituminous mixture production planned for the day by 1000, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 2000 tons, divide the bituminous mixture production planned for the day by 2000, and round up to the next higher whole number; this will be the number of tests required for the day.

**Note #6** The Department will select at least one of the two companion cores per lot to be tested for mat density. However, the Department may elect to test all companions to provide a direct verification of all individual and daily average test results. Agency representative observes all Contractor coring, sawing, measuring and testing, and takes possession of Mn/DOT cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

**Note #7** Mixtures that contain shingles will require a minimum of one spot check per day in addition to the required method (b) or (c) used for % total AC. The spot checks will be used for the determination of new added asphalt binder.

**Note #8** Mn/DOT projects in the 2010 Construction season will require the calculated Adjusted Asphalt Film Thickness (AFT). VMA will still be calculated for informational purposes, but will not be used for acceptance criteria. The adjusted AFT shall be calculated each time a gradation test is required.

**Note #9** One gradation per 450 metric tons (500 tons) per mix blend, at the start of production, for first 1,800 metric tons (2,000 tons) of mixture produced, then one gradation per 900 metric tons (1000 tons) or portion thereof, of mixture produced with a minimum of one test per day.

**Note #10** When required, Longitudinal Joint (LJ) Density will be evaluated at random lots as determined by the engineer. Number of LJ lots for the day = number of lots calculated for mat density divided by .20 and rounding up to the next integer. Minimum of one LJ lot per day. For designated LJ lots the agency will test at least one of the mat density companion cores and at least one of the LJ companion cores.

**Note #11** Random number generation and determination of random sample location shall be consistent with the Mn/DOT Bituminous Manual Section 5-693.7 Table A or Section 5 of ASTM D3665. The Engineer may approve alternate methods of random number generation.

**Note #12** Dispute resolution procedure for material testing is on file in Mn/DOT Bituminous Engineering Unit and also available on the Bituminous Office Website: <http://www.dot.state.mn.us/materials/bituminousdocaids.html>

**III. Seal Coat Construction Items for 2356 Special Provisions****A. (2356) Bituminous Seal Coat**

<b>DEFINITIONS</b>				
<b>Sample Type</b>	<b>Description</b>	<b>Sample Location Determined By</b>	<b>Sample Taken By</b>	<b>Sample Tested By</b>
	<i>Definitions from 23 CFR 637.203</i>			
QA Quality Assurance	All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality			
QC Quality Control	All contractor/vendor operational techniques and activities that are performed or conducted to fulfill the contract requirements.	Contractor	Contractor	Contractor
Verification sampling and testing	Sampling and testing performed to validate the quality of the product.	Agency	Agency	Agency
	<i>Mn/DOT Definition</i>			
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

Should unique circumstances arise on a project which makes the quantities or rates of testing materials impractical, they may be revised prior to performing the work by contacting the Pavement Management Unit and obtaining their approval. The testing rates shown are only minimums.

**III. Seal Coat Construction Items for 2356 Special Provisions (cont.)****A. (2356) Bituminous Seal Coat (cont.)**

<b>SAMPLE SIZE: Mix Design: 150 lbs.</b>					
<b>Pay Item No.</b>	<b>Test Type</b>	<b>Spec. No.</b>	<b>Quality Control (QC)</b>	<b>Quality Assurance (QA)</b>	<b>Form No.</b>
2356	Seal Coat Mix Design  Gradation and Aggregate Qualities	2356	One per source  Average gradation during production. % Shale Static Stripping Test Flakiness Index Los Angeles Rattler Aggregate design application rate. Bit. Material design application rate Loose unit mass (weight) of the aggregate Bulk specific gravity of the aggregate	Verify all QC results and review mix design.	
2356	Seal Coat Aggregate  Stockpile Production Gradation  Construction	2356	Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location.  Sample for gradation. One per day. Test if required by the Engineer. All samples shall be taken from chip spreader hopper.	Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location.  Sample for gradation. One per day. Test if required by the Engineer. All samples shall be taken from chip spreader hopper.	
2356	Seal Coat Emulsion  Application rate  Fog Seal Emulsion  Application rate		Use a Certified Source.  Verify the application rate daily by dividing the volume used by the area covered.  Use a certified source.  Verify the application rate daily by dividing the volume used by the area covered.	Sample first shipment, then submit one sample per 200 m <sup>3</sup> (50,000 gal.). Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.  One sample to test for dilution rate. Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card  2413 Asphalt Sample ID Card

**III. Seal Coat Construction Items for 2356 Special Provisions (cont.)****B. (2356) Seal Coat – Micro-Surfacing**

SAMPLE SIZE: Mix Design: 150 lbs.					
Pay Item No.	Test Type	Spec. No.	Quality Control (QC)	Verification	Form No.
2356	Mix Design	2356	One per source	Verify all QC results and review mix design.	
	Gradation and Aggregate Qualities		Average gradation during production. Sand Equivalent Abrasion Resistance Soundness		
	Asphalt Emulsion	3151	Certified Source  Residue after Distillation Softening Point Penetration at 25C (77F) Absolute Viscosity at 60C (140F)	Review test results submitted in the mix design format required in the special provision.	
Mix Design		Wet Stripping Wet Track Abrasion Loss - one hour soak - six day soak Saturated Abrasion Compatibility Mix Time at 25C (77F) Mix Time at 37.4C (100F)			
2356	Aggregate				
	Stockpile Production		Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location.		
	Construction		Sample for gradation, sand equivalence and moisture content. One per 435.6 metric tons (500tons), minimum of one per day.	Test for gradation. One per 1360t (1500 tons), If a temporary stockpile is used, test at this location. Determine moisture content. One per day	
2356	Micro Surfacing Emulsion		Use a Certified Source.	Sample first shipment, then submit one sample per 200 m <sup>3</sup> (50,000 gal.). Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card
	Quantity		Verify the quantity using equipment counter readings.		
	Fog Seal (when required)		Use a certified source.	One sample to test for dilution rate. Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card
	Application rate		Verify the application rate daily by dividing the volume used by the area covered.		

**IV. Concrete Construction Items ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))**

The testing rates shown in this Schedule of Materials Control are minimums. All samples shall be taken in a random manner using an appropriate number generator. Take as many tests as necessary to ensure quality concrete.

Field testing is required for small quantity concrete pours that are  $\leq 20 \text{ m}^3$  ( $\text{yd}^3$ ) per day. Document quantities on Form 2448 Weekly Concrete Report. If concrete quantities on the entire project total  $< 100 \text{ m}^3$  ( $\text{yd}^3$ ), Form 02415 or Form 2403 Inspection Report for Small Quantities may be used.

It is recommended that the Agency Plant Monitor be present during critical pours, such as superstructure or paving concrete (ie. 3Y33, 3Y36, 3Y46, 3A21).

If any field test fails, reject the concrete or if the Producer makes adjustments to the load to meet requirements, record the adjustments on the Certificate of Compliance and the Weekly Concrete Report. Retest the load and record the adjusted test results. Make sure the next load is tested before it gets into the work.

If batching adjustments are made at the plant, test the adjusted load, before it gets into the work. Continue to test the concrete when test results are inconsistent or marginal.

The first load of concrete for any pour must have passing air content and slump results, prior to placing.

Material not meeting requirements shall not knowingly be placed in the work. If failing concrete inadvertently gets placed in the work, either the Mn/DOT Standard Specifications for Construction or the Schedule of Price Reductions for Concrete address penalties.

It is recommended that the Agency representative continually monitor the progress of all concrete pours in the field and review Certificates of Compliance. It is not a recommended practice to only perform minimum testing requirements and leave the pour.

Should circumstances arise on a project which makes the testing rate impractical, contact the Concrete Engineering Unit.

<b>DEFINITIONS</b>				
	<b>Description</b>	<b>Sample Location Determined By</b>	<b>Sample Taken By</b>	<b>Sample Tested By</b>
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor <u>is required</u> to test this sample. The results shall be used as part of the QC program.	Agency	Agency	Contractor
IAST	The <u>I</u> ndependent <u>A</u> ssurance <u>S</u> ampling and <u>T</u> esting assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

<b>Concrete Plant Batching Materials</b>				
<b>Remarks:</b> (1) All materials must come from certified or approved sources. All certified sources must state so on the delivery invoice. (2) The most current list of certified/approved sources can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a> .				
<b>Sample Sizes:</b> <b>Cementitious:</b> 2 kg (5 lb) <b>Admixture:</b> 0.25 L (1/2 pt) Producer obtains samples from dispensing tubes. Store samples in plastic container. <b>Water:</b> 3.5 L (1 gal) Store sample in a clean glass or plastic container.				
Pay Item No.	Material	Spec. No.	Minimum Required Sampling Rate for Laboratory Testing	Form No.
2301	Portland Cement	3101	1 sample per project or 1 every 3 months, whichever is less.	24300 ID Card Cement Samples
2302	Slag	3102	The Producer obtains and stores the sample in a sealed container provided by the Agency, and includes the supplier's delivery invoice from which the sample is obtained.	
2401	Blended Cement	3103	Take additional samples as Concrete Engineer directs.	
2405	Fly Ash	3115		
2411	Admixtures (Accelerating, Retarding, Water-Reducing, Air-Entraining, etc.)	3113	For Concrete Paving: 1 sample of each shipment For Other Concrete: 1 sample per project or 1 every 3 months, whichever is less.	2410 Sample ID Card
2412			The Producer obtains and stores the sample in a sealed container provided by the Agency.	
2422				
2452				
2461	Water	3906	1 sample from any questionable source	2410 Sample ID Card
2506				
2511				
2514				
2519	Alkali Silica Reactivity (ASR) Testing	2301	1 per project Write "Project Specific ASR Testing" on 2410 Sample ID card for the first sand quality and cementitious samples submitted.	
2521				
2531				
2533				
2545				
2550				
2554				
2557				
2564				
2565				
2566				
2567				
2568				
2569				
2570				
2571				

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))**Certified Ready-Mix - Concrete Plant Production****Remarks:**

- (1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract.  
 (2) All QC and Verification gradation tests require companion samples. Samples taken at location identified on Contact Report located at plant.  
 (3) Perform Quality testing as directed by the Concrete Engineer.

**Sample Sizes:****Gradation:**

+19 mm (3/4" Plus)  
 -19 mm (3/4" Minus)  
 CA-70, Sand

10 – 15 kg (25 lb.)  
 5 – 7 kg (10-15 lb.)  
 5 kg (10 lb.)

**Quality:**

Coarse Aggregate 25 kg (50 lb.)  
 Fine Aggregate 15 kg (30 lb.)

**Moisture:**

Coarse Aggregate 2000 g (4.4 lb.)  
 Fine Aggregate 500 g (1.1 lb.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2302	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	2461	<p><b>When over 20 m<sup>3</sup> (yd<sup>3</sup>) of Agency concrete produced per day:</b>  <b>Coarse:</b> 1 per 100 m<sup>3</sup> (yd<sup>3</sup>)  <b>Fine:</b> 1 per 200 m<sup>3</sup> (yd<sup>3</sup>)</p> <p>Passing aggregate gradations are required prior to the start of concrete production each day. Performing testing on representative material at the end of the most recent day of production is allowed.</p> <p>Washing the fine aggregate gradation (QC) sample is not required when the result on the -75µm (#200) sieve of the unwashed sample is less than 1.0%.</p> <p>Hold QA (QC companion) samples until they are picked up by the Agency monitor. Discard after two weeks if not picked up.</p>	Test the previous 3 QA (QC companion) samples when a Verification test fails or when a Verification Companion is outside of Lab-Field Tolerance.	21763 Concrete Aggregate Worksheet (QC/QA)  2449 Weekly Concrete Aggregate Report
2401		3126			
2405		3137			
2411					
2412					
2422					
2452					
2461					
2506					
2511					
2514					
2519					
2521					
2531					
2533					
2545					
2550					
2554					
2557					
2564					
2565					

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

Certified Ready-Mix - Concrete Plant Production (cont.)					
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514	Gradation Testing (Verification/Verification Companion) (5-694.145 and 5-694.148)	2461 3126 3137	Test the Verification Companion sample. Complete on the day the sample was taken.  Wash all fine aggregate Verification Companion samples.	<b>Coarse and Fine:</b> 1 per day or 1 per 1000 m <sup>3</sup> (yd <sup>3</sup> ) whichever results in the lowest sampling rate. - 2 Verification samples per week when Agency production is 3 or more days per week.  When ≤ 20 m <sup>3</sup> (yd <sup>3</sup> ) of Agency concrete is produced <b>per week</b> , Verification samples are not required.  Take additional Verification samples when production problems exist.	2449 Weekly Concrete Aggregate Report 24143 Weekly Certified Ready-Mix Plant Report (Verification)
2519 2521 2531 2533 2545 2550 2554	Quality Testing including Coarse Aggregate Testing on -75µm (#200) (5-694.146)	3126 3137	Producer's/Contractor's Discretion	1 test each fraction per month	2410 Sample ID Card
2557 2564 2565	Aggregate Moisture Testing (QC) (5-694.142)	2461	<b>When over 20 m<sup>3</sup> (yd<sup>3</sup>) of Agency concrete produced per day:</b> <b>Coarse and Fine:</b> 1 per 200 m <sup>3</sup> (yd <sup>3</sup> ) or completed every 4 hours, whichever results in the highest sampling rate. - Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. - If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Agency or private work. - A moisture probe is allowed in lieu of performing oven dry moisture contents on fine aggregate, provided an oven dry moisture comparison is performed at a minimum rate of 1 per week.  Perform the initial moisture content by the oven dry method for all critical pours involving any of the following mixes (3Y33, 3Y36, 3Y46, 3A21).	None	2152 Concrete Batching Report



IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))**Certified Ready-Mix for Concrete Paving - Concrete Plant Production****Remarks:**

- (1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.
- (2) A certified ready-mix plant shall be **dedicated (provides concrete only to the concrete paving project)** when more than 350 cubic meters (cubic yards) of concrete production is ordered.
- (3) When a certified ready-mix plant is used for concrete paving, a Contractor QC Technician and Agency Plant Monitor are **required to be present** during dedicated pours and when w/c incentives apply.
- (4) All gradation samples shall be taken in the presence of the Agency, unless otherwise authorized by the Engineer. All gradation and quality tests require companion samples.
- (5) Perform Quality testing as directed by the Concrete Engineer.

**Sample Sizes:****Gradation:**

+19 mm (3/4" Plus)  
 -19 mm (3/4" Minus)  
 CA-70, Sand

**Quality:**

Coarse Aggregate 25 kg (50 lb.)  
 Fine Aggregate 15 kg (30 lb.)

**Moisture:**

Coarse Aggregate 2000 g (4.4 lb.)  
 Fine Aggregate 500 g (1.1 lb.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	2461 3126 3137	<p><b>Coarse and Fine:</b>            1 per 250 m<sup>3</sup> (yd<sup>3</sup>) or completed every 4 hours, whichever results in the highest sampling rate.</p> <p>Passing aggregate gradations are required prior to the start of concrete production each day. Performing testing on representative material at the end of the most recent day of production is allowed.</p> <p>Washing the fine aggregate gradation (QC) sample is not required when the result on the -75µm (#200) sieve of the unwashed sample is less than 1.0%,</p> <p>Hold QA (QC companion) samples until they are picked up by the Agency monitor. Discard after two weeks if not picked up.</p> <p><b>When well-graded aggregate incentives apply: Use the Contractor's gradation results for calculations</b></p>	<p><b>Coarse and Fine:</b>            Test the first 4 samples each time the Contractor mobilizes the plant or changes aggregate sources.</p> <p>1 QA gradation per day is performed on randomly selected Contractor samples thereafter.</p>	<p>21763 Concrete Aggregate Worksheet (QC/QA)</p> <p>2449 Weekly Concrete Aggregate Report</p> <p>24143 Weekly Certified Ready-Mix Plant Report</p>

Certified Ready-Mix for Concrete Paving - Concrete Plant Production (cont.)					
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Aggregate Moisture Testing (QC/Verification) (5-694.142)	2461	<p><b>Coarse and Fine:</b> 1 per 250 m<sup>3</sup> (yd<sup>3</sup>) or completed every 4 hours, whichever results in the highest sampling rate unless w/c incentives apply.</p> <p>Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day.</p> <p>If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Agency or private work.</p> <p><b>Moisture Probes are not allowed during concrete paving.</b></p>	<p><b>If w/c incentives apply:</b> <b>Coarse and Fine:</b> 1 per 250 m<sup>3</sup> (yd<sup>3</sup>) or completed every 4 hours, whichever results in the highest sampling rate.</p> <p>Do not leave samples unattended.</p>	2152 Concrete Batching Report
	Water Content Determination Test (Verification) (5-694.532)		Sample the fresh concrete at the plant.	<p><b>If w/c incentives apply:</b> Water content determination testing is completed in conjunction with Agency aggregate moisture testing. Initial samples for moisture and microwave testing should be taken after batch ticket water has stabilized.</p> <p>Do not leave samples unattended.</p>	Microwave Oven Worksheet
	Unit Weight (QC) (5-694.542)		Test the first load of concrete at the plant.	None	
	Air Content (QC) (5-694.541)	2461	Test the first load of concrete at the plant. The minimum air content shall be 7.0% prior to leaving the plant.	None	Certificate of Compliance
	Coarse Aggregate Testing on -75 µm (#200) (QC/QA) (5-694.146)	3137	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question. 1 test per day thereafter	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.	
	Quality Testing	3126 3137	At Contractor's discretion	1 test each fraction every 5 days of production.	2410 Sample ID Card

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

Certified Ready-Mix for Concrete Paving - Concrete Plant Production (cont.)												
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing								
2301	Coarse Aggregate Quality Testing for Incentive/Disincentive	3137	At Contractor's discretion	<div>When coarse aggregate quality incentives apply: Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. The sampling rate for the two largest fractions:</div> <table><tr><th>Plan m<sup>3</sup> [cubic yards] of concrete</th><th>Samples per fraction (n)</th></tr><tr><td>5,000 – 25,000</td><td>10</td></tr><tr><td>25,000 – 50,000</td><td>15</td></tr><tr><td>50,000+</td><td>20</td></tr></table>	Plan m <sup>3</sup> [cubic yards] of concrete	Samples per fraction (n)	5,000 – 25,000	10	25,000 – 50,000	15	50,000+	20
Plan m <sup>3</sup> [cubic yards] of concrete	Samples per fraction (n)											
5,000 – 25,000	10											
25,000 – 50,000	15											
50,000+	20											
				Coarse Aggregate Quality Incentive/Disincentive Spreadsheet								

## Concrete Paving Batch Plant - Concrete Plant Production

## Remarks:

- (1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.
- (2) A Contractor QC Technician and Agency Plant Monitor are required to be present during the entire pour.
- (3) All gradation samples shall be taken in the presence of the Agency, unless otherwise authorized by the Engineer. All gradation and quality tests require companion samples.
- (4) Perform Quality testing as directed by the Concrete Engineer.

## Sample Sizes:

## Gradation:

+19 mm (3/4" Plus)  
-19 mm (3/4" Minus)  
CA-70, Sand

10 – 15 kg (25 lb.)  
5 – 7 kg (10-15 lb.)  
5 kg (10 lb.)

## Quality:

Coarse Aggregate 25 kg (50 lb.)  
Fine Aggregate 15 kg (30 lb.)

## Moisture:

Coarse Aggregate 2000 g (4.4 lb.)  
Fine Aggregate 500 g (1.1 lb.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	3126 3137	<p><b>When over 200 m<sup>3</sup> (250 yd<sup>3</sup>) is produced per day:</b> 1 per 750 m<sup>3</sup> (1000 yd<sup>3</sup>) or completed every 4 hours, whichever results in the highest sampling rate. 5 per day maximum</p> <p><b>When well-graded aggregate incentives apply:</b> Use the Contractor's gradation results for well-graded aggregate incentive calculations</p>	<p>Test the first 4 samples each time the Contractor mobilizes the plant or changes aggregate sources. 1 QA gradation per day is performed on randomly selected Contractor samples thereafter.</p>	<p>21764 Concrete Aggregate Worksheet JMF</p> <p>Well-graded aggregate summary spreadsheet</p>

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

Concrete Paving Batch Plant - Concrete Plant Production (cont.)													
Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.								
2301	Coarse Aggregate Testing on -75 μm (#200) (QC/QA) (5-694.146)	3137	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.  1 test per day thereafter	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.									
	Aggregate Moisture Testing (QC/Verification) (5-694.142)		Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed.	1 per 750 m <sup>3</sup> (1000 yd <sup>3</sup> ) or completed every 4 hours, whichever results in the highest sampling rate.  Do not leave samples unattended.	Computerized Microwave Oven Worksheet								
	Water Content Determination Test (Verification) (5-694.532)		Sample the fresh concrete at the plant.	Water content determination testing is completed in conjunction with Agency aggregate moisture testing. Initial samples for moisture and microwave testing should be taken after batch ticket water has stabilized.  Do not leave samples unattended.									
	Unit Weight (QC) (5-694.542)		Test the first load of concrete at the plant.	None									
	Air Content (QC) (5-694.541)	2461	Test the first load of concrete at the plant. The minimum air content shall be 7.0% prior to leaving the plant.	None									
	Quality Testing (Verification)	3126 3137	At Contractor's discretion	1 test each fraction every 5 days of production.	2410 Sample ID Card								
	Coarse Aggregate Quality Testing for Incentive/Disincentive	3137	At Contractor's discretion	<b>If coarse aggregate quality incentives apply:</b> Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. The sampling rate for the two largest fractions: <table><tr><th>Plan m<sup>3</sup> [cubic yards] of concrete</th><th>Samples per fraction (n)</th></tr><tr><td>5,000 – 25,000</td><td>10</td></tr><tr><td>25,000 – 50,000</td><td>15</td></tr><tr><td>50,000+</td><td>20</td></tr></table>	Plan m <sup>3</sup> [cubic yards] of concrete	Samples per fraction (n)	5,000 – 25,000	10	25,000 – 50,000	15	50,000+	20	Coarse Aggregate Quality Incentive/Disincentive Spreadsheet
Plan m <sup>3</sup> [cubic yards] of concrete	Samples per fraction (n)												
5,000 – 25,000	10												
25,000 – 50,000	15												
50,000+	20												

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

Concrete Field Materials				
<b>Remarks:</b> (1) Refer to Metallic Materials and Metal Products for sampling requirements for concrete reinforcement. (2) Only curing and joint materials from approved sources are allowed. The most current lists can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a> .				
<b>Sample Sizes:</b> <b>Curing Materials:</b> Burlap: 1 m <sup>2</sup> (yd <sup>2</sup> ) Paper and Plastic: 0.25 m <sup>2</sup> (2 ft <sup>2</sup> ) Membrane Compound 1 liter (1 qt) Materials must be thoroughly stirred or agitated immediately prior to taking sample. Store sample in steel container and cover immediately.				
<b>Joint Materials:</b> Hot Poured Elastomeric: 5 kg (10 lb) Take samples from application wand. Preformed Elastomeric: 2 m (6 ft) Silicone Joint Sealer: 0.5 liter (1 pt) Store sample in steel container. Preformed: 0.25 m <sup>2</sup> (2 ft <sup>2</sup> )				
Pay Item No.	Material	Spec. No.	Minimum Required Field Sampling Rate	Form No.
2301 2302 2401 2411 2514 2521 2531	Preformed	3702	Visual Inspection	2410 Sample ID Card
2301 2302 2401	Preformed Elastomeric Type	3721	1 per lot	
	Silicone Joint Sealer	3722	1 per lot	
	Hot Poured Elastomeric Type	3723 3725	1 per lot	
2301 2302 2401 2411 2514 2520 2521 2531 2533	Burlap	3751	Visual Inspection	
	Paper	3752	Visual Inspection - Must be white opaque	
	Membrane Curing Compound	3754 3754AMS 3755	Refer to the approved products list of curing compounds for <b>pre-approved</b> lots at <a href="http://www.mnrapps.dot.state.mn.us/CuringCompoundProducts/curingcompounds.aspx">http://www.mnrapps.dot.state.mn.us/CuringCompoundProducts/curingcompounds.aspx</a>	
	Plastic	3756	Visual Inspection -Must be white opaque	
			A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.	

Concrete Field Testing – Bridges and General Concrete				
Pay Item No.	Test Type	Spec. No.	Agency Testing	Form No.
2401	Air Content (Verification) (5-694.541)	2461	1 per 100 m <sup>3</sup> (yd <sup>3</sup> ) Test first load each day per mix  Test when admixture adjustments are made to the mix.	2448 Weekly Concrete Report
2405				
2411				
2412				
2422	Slump (Verification) (5-694.531)	2461	1 per 100 m <sup>3</sup> (yd <sup>3</sup> ) Test first load each day per mix 1 per day for slip form placement  Test when admixture adjustments are made to the mix.	
2452				
2461				
2506				
2511	Concrete Temperature (Verification) (5-694.550)	2461	Record temperature each time air content, slump, or strength test specimen is performed/fabricated.	
2514				
2520				
2521				
2531	Compressive Strength (Verification) (5-694.511)	2461	1 cylinder per 100 m <sup>3</sup> (yd <sup>3</sup> ) 1 cylinder per day for sidewalk and curb and gutter  A set of 3 cylinders shall be made when control cylinders are needed. Mn/DOT standard cylinder mold size is 100 x 200 mm (4 x 8 inch). If aggregate has a maximum size greater than 31.5 mm (1-1/4 inch), use 150 x 300 mm (6 x 12 inch) molds.	2409 ID Card Concrete Test Cylinder
2533				
2545				
2550				
2554				
2557				
2564				
2565				

Concrete Field Testing – Cellular Concrete				
Pay Item No.	Test Type	Spec. No.	Agency Testing	Form No.
2519	Compressive Strength (Verification) (5-694.511)	2461 2519	1 set of 4 cylinders per day  100 x 200 mm (4 x 8 inch) cylinders shall be filled in two equal lifts, do not rod the concrete, lightly tap the sides, cover and move to area with minimal or no vibration. Do not disturb for 24 hours.	2409 ID Card Concrete Test Cylinder

Concrete Field Testing – Pavement					
Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2301	Air Content Before Consolidation (QC/QA) (5-694.541)	2461	1 per 300 m <sup>3</sup> (300 yd <sup>3</sup> ) Test first load each day per mix	1 air test per day	2448 Weekly Concrete Report
	Air Content After Consolidation (QC/QA) (5-694.541)	2461	Test 1 air content per ½ day of slip form paving to establish an air loss correction factor (ACF). See Special Provisions for additional information.	1 air test per day	
	Slump (QC/QA) (5-694.531)	2461	1 per 300 m <sup>3</sup> (300 yd <sup>3</sup> ) Test first load each day per mix 1 per day for slip form paving	1 slump test per day	
	Concrete Temperature (QC/QA) (5-694.550)	2461	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Contractor.	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Agency.	
	Flexural Strength (QC) (5-694.521)	2301	1 beam (28-day) per day - Make additional control beams as necessary. - Control beams shall be made <u>within the last hour</u> of concrete poured each day. Fabricate beams, deliver beams to curing site, and clean beam boxes.	Supply beam boxes, cure, and test beams.	
	Concrete Pavement Texture (QC)	2301	1 per 1000 linear feet per lane of concrete pavement at locations determined by the Agency. All adjoining lanes shall be tested at the same location if paved at the same time. The Contractor supplies all materials necessary to perform the required testing.	Determine texture testing locations using random numbers.	Concrete Texture spreadsheet...
	Thickness (QC/Verification)	2301	The Contractor drills concrete cores. In addition to coring, the Contractor may be required to verify the thickness of the concrete by other methods at a rate specified in the Special Provisions of the contract.	Determine coring locations using random numbers. Initial pavement at core locations and re-initial the sides of specimens after coring to clearly verify their authenticity.	24327 Field Core Report
	Surface Smoothness	2301	Contractor provides Mn/DOT certified inertial profiler results for bumps/dips and/or Areas of Localized Roughness for the entire project as required by the Contract.	None	Incentive/Disincentive Smoothness Worksheet

IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))**Concrete Field Testing - Low Slump Concrete for Bridge Deck Overlays****Remarks:**

- (1) Mix design is provided by Mn/DOT on the back of the Form 21412 Weekly Report of "Low Slump Concrete" unless otherwise specified in the Contract.
- (2) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
- (3) Perform Quality testing as directed by the Concrete Engineer.

**Sample Sizes:****Gradation:**

+19 mm (3/4" Plus) 10 – 15 kg (25 lb.)  
 -19 mm (3/4" Minus) 5 – 7 kg (10-15 lb.)  
 CA-70, Sand 5 kg (10 lb.)

**Quality:**

Coarse Aggregate 25 kg (50 lb.)  
 Fine Aggregate 15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2404	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148))	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: <ul style="list-style-type: none"> <li>Aggregate pit numbers</li> <li>1 passing gradation result per fraction each time aggregate is delivered to the site.</li> </ul> No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card  21412 Weekly Report of "Low Slump Concrete"
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m <sup>3</sup> (yd <sup>3</sup> ) Test at beginning of pour each day	
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m <sup>3</sup> (yd <sup>3</sup> ) Test at beginning of pour each day  For concrete from a concrete-mobile, allow mix to hydrate 4 to 5 minutes before slump test to assure all cement is saturated.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder per 30 m <sup>3</sup> (yd <sup>3</sup> )	2409 ID Card Concrete Test Cylinder



IV. Concrete Construction Items (cont.) ([www.dot.state.mn.us/materials/concrete.html](http://www.dot.state.mn.us/materials/concrete.html))

<b>Concrete Field Testing – Concrete Pavement Repair (CPR)</b>					
<b>Remarks:</b> (1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract. (2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.) (3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples. (4) Perform Quality testing as directed by the Concrete Engineer.					
<b>Sample Sizes:</b> <b>Gradation:</b> +19 mm (3/4" Plus) 10 – 15 kg (25 lb.) -19 mm (3/4" Minus) 5 – 7 kg (10-15 lb.) CA-70, Sand 5 kg (10 lb.)					
			<b>Quality:</b> Coarse Aggregate 25 kg (50 lb.) Fine Aggregate 15 kg (30 lb.)		
Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: <ul style="list-style-type: none"> <li>Aggregate pit numbers</li> <li>1 passing gradation result per fraction each time aggregate is delivered to the site.</li> </ul> No quality test results are required.  Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m <sup>3</sup> (yd <sup>3</sup> ) Test at beginning of pour each day.	2448 Weekly Concrete Report
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m <sup>3</sup> (yd <sup>3</sup> ) Test at beginning of pour each day.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder per 30 m <sup>3</sup> (yd <sup>3</sup> )	2409 ID Card Concrete Test Cylinder

**Concrete Field Testing –Dowel Bar Retrofit (DBR)****Remarks:**

- (1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.
- (2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)
- (3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
- (4) Perform Quality testing as directed by the Concrete Engineer.

**Sample Sizes:**

<b>Gradation:</b>	
+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)
-19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)
CA-70, Sand	5 kg (10 lb.)
<b>Quality:</b>	
Coarse Aggregate	25 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: <ul style="list-style-type: none"> <li>Aggregate pit numbers</li> <li>1 passing gradation result per fraction each time aggregate is delivered to the site.</li> </ul> No quality test results are required.  Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card
	Dowel Bar Retrofit Material Compressive Strength (Verification) (5-694.511)	2301 2302	None	During the pre-production test operations: 1 set of 3 cylinders tested at 3 hours 1 set of 3 cylinders tested at 1 day Testing may need to be repeated if any problems with the dowel bar retrofit material are encountered.  First day of production: 1 set of 3 cylinders tested at 3 hours 1 set of 3 cylinders tested at 1 day  After the first day of production: 1 cylinder per day during production tested at rate determined by Engineer.	2409 ID Card Concrete Test Cylinder

## V. Landscaping and Erosion Control Items

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105 2571 2575	1. Topsoil Borrow, Select Topsoil Borrow, & Premium Topsoil Borrow <sup>a</sup> Salvaged Topsoil (stockpiled)	3877.2	None	From each source: One composite sample for the first 765 m <sup>3</sup> (1,000 Cu yd) or less. One composite sample for each additional 2,300 m <sup>3</sup> (3,000 Cu yd) or fraction thereof.	10 kg (20 lb.)	<sup>a</sup> Testing takes about three weeks after delivery of the sample to the Department Laboratory. Sampling shall be done once source is identified or existing topsoil is stockpiled. Check acceptance schedule Spec 2105 Table 2105-1. Small Quantity - 230 m <sup>3</sup> (300 Cu yd)
2571 2575 2577	2. Plant Stock & Landscape Materials <sup>b</sup>	3861 and 2571.2A1	Field Inspection at Job Site, submit itemized report for each shipment <sup>c</sup> .			<sup>b</sup> Preliminary inspection will not be done at the source. Material must be in accordance with the Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects. <sup>c</sup> Utilize "Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects" to determine and measure minimum and maximum criteria thresholds. The following documentation must be provided as a condition for delivery and approval: 1. A Mn/DOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment 2. A valid copy of a nursery stock (dealer or grower) certificate registered with the MN Dept. of Agric. And/ or a current nursery certificate/license from a state or provincial Dept. of Agric. for each plant stock supplier. 3. A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier. 4. Plant material shipped from out-of-state nursery vendors subject to pest quarantines must be accompanied by documentation certifying all plants shipped are free of regulated pests. 5. Bills of lading (shipping documents) for all materials delivered. 6. Invoices for all materials to be used. 7. Each bundle, bale, or individual plant must be legibly and securely labeled with the name and size of each species or variety.
2502 2573 2575 2577	3. Erosion Control Blanket <sup>d</sup>	3885	Visual Inspection	Random - See Footnote d	1 m <sup>2</sup> (1 Sq yd)	<sup>d</sup> Periodic tests from approved sources to verify quality. Check Approved/Qualified Products List.

## V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2573 2577	4. Erosion Control Netting <sup>e</sup>	3883	Visual Inspection	Random - See Footnote <sup>e</sup>	1 m <sup>2</sup> (1 Sq yd)	<sup>e</sup> Periodic tests from approved sources to verify quality. Check Approved/Qualified Products List
2573	5. Silt Fence <sup>f</sup>	3886	Visual Inspection. Check Product Label. Obtain Certificate of Compliance with MARV values	For amounts 300m (1000 ft) or greater.	3 m (9 ft)	<sup>f</sup> Samples sent 21 days prior to use. Check Approved/Qualified Products List (A/QPL) of accepted geotextiles.
2573	6. Flotation Silt Curtain <sup>g</sup>	3887	Visual Inspection			<sup>g</sup> Accepted, based on manufacturers' certification. Check weight of fabric.
2573 2575	7. Erosion Stabilization Mat <sup>h</sup>	3888	Visual Inspection	See Footnote <sup>h</sup>	1 m <sup>2</sup> (1 Sq yd)	<sup>h</sup> Check Approved/Qualified Products List
2573	8. Sediment Mat <sup>i</sup>	3894	Visual Inspection	See Footnote <sup>i</sup>		<sup>i</sup> Periodic tests from approved sources to verify quality.
2573	9. Inlet Protection <sup>j</sup>	3891	Visual Inspection			<sup>j</sup> Check Approved/Qualified Products List (A/QPL) and Specification.
2573	10. Filter Logs <sup>k</sup>	3897	Visual Inspection	None		<sup>k</sup> Check Approved/Qualified Products List (A/QPL).
2573	11. Flocculants <sup>l</sup>	3898	Visual Inspection	None		<sup>l</sup> Check Approved/Qualified Products List (A/QPL).
2571 2575	12. Fertilizer <sup>m</sup>	3881	Visual Inspection			<sup>m</sup> Bagged: Inspected on the basis of guaranteed analysis. Rate based on fertility analysis of slope dressing/topsoil. Bulk: Inspector to obtain copy of invoice of blended material stating analysis. Check the type specified.
2571 2575	13. Agricultural Lime <sup>n</sup>	3879	One gradation test for each 180 Metric Ton (200 ton)			<sup>n</sup> Contractor must supply amount of ENP (Equivalent Neutralizing Power) for each shipment.
2575 2577	14. Mulch Material A. Type 3 Mulch - Certified Weed Free (Certified sources only) <sup>o</sup>	3882	Visual Inspection, Check if from Certified Vendor by Minnesota Crop Improvement Association. Must be tagged, grain straw only.			<sup>o</sup> Certified mulch will be indicated by label.

## V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2571 2575 2577	14. Mulch Material B. Type 6 Mulch – Woodchips	3882	Visual Inspection, one gradation per supplier.	Gradation 1/10,000 yd <sup>3</sup> per supplier.		All wood chips supplied by a supplier outside the Emerald Ash Borer quarantine area or have an Emerald Ash Borer Compliance Agreement with the MDA.
2502 2575 2577	15. Seeds A. Seeds (Certified Vendors Only) (Mixes 100-299) <sup>p</sup>	3876	Check for guaranteed analysis labels. If materials are on hand and past the twelve months, testing must be done.	Sampling only, if quantity used is more than 1800 kg. (4,000 lb.) Send to Brett Troyer M.S. 620	0.5 L (1 pint)	<sup>p</sup> Seed guaranteed as meeting the requirements is identified by official guaranteed analysis labels affixed to each container of seed in addition to the customary seed tag. Any moldy or insect contaminated seed must be rejected.
2502 2575 2577	15. Seeds B. Native Seed (Mixes 300-399) certified seed only <sup>q</sup>	3876	Check if from Certified Vendor by Minnesota Crop Improvement Association. Must be tagged. If materials are on hand and past the twelve months, testing must be done.	Sample only if quantity used is more than 1800 kg (4,000 lb.) Send to: Brett Troyer M.S 620		<sup>q</sup> Certified seed will be indicated by label on containers.
2575	16. Sod <sup>r</sup>	3878	Final Visual Inspection at site.			<sup>r</sup> A Certificate of Compliance must be furnished by the producer to the Engineer for the type of sod supplied showing correct grass varieties.
2571 2575	17. Compost A. Compost Certified Source <sup>s</sup>	3890	Visual Inspection			<sup>s</sup> Check Approved/Qualified Products List (A/QPL). Accepted on the basis of certified test reports furnished to the Engineer by the supplier. Periodic sampling to verify quality.
2571 2575	17. Compost B. Compost Non-Certified Source <sup>t</sup>	3890		Must be sampled - One Sample per 300 m <sup>3</sup> (500 Cu Yd)		<sup>t</sup> Submit samples six weeks before use. Small quantity 75 m <sup>3</sup> (100 Cu Yd) or less.
2575	18. Hydraulic Soil Stabilizer <sup>u</sup>	3884	Slump Test for Type 8	None		<sup>u</sup> Check Approved/Qualified Products List (A/QPL).
2571	19. Peat Moss <sup>v</sup>	3880	Final Inspection at Job Site	For material furnished in bulk; 1 sample for 100 m <sup>3</sup> (100 Cu. yd.) or less. One additional sample for each 200 m <sup>3</sup> or less, thereafter.	2-1/4 kg (5 lb.)	<sup>v</sup> Submit Samples in moisture proof bags. Materials furnished in packaged form may be accepted on the basis of guaranteed analysis.

Schedule of Materials Control

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401	Asphalt Plank	3204	Visual Inspection	1 per 1,000 plank or less of each thickness in each shipment	3 – 1 m (yd) pieces samples from different planks	
2131	Calcium Chloride	3911	Visual Inspection	Liquid: 1 per 40,000 L (1 per 10,000 gal) Dry: 1 per shipment	0.5 L (1 pint) or 0.5 kg (1 lb.) in Plastic Container	
2131	Magnesium Chloride	3912	Visual Inspection	1 per 40,000 L (1 per 10,000 gal.)	0.5 L (1 pint) in Plastic Container	
2331	Hot-Pour Crack Sealant for Crack Sealing/Filling	3719 3723 3725	Visual Inspection	1 per lot. Take samples from application wand. Use caution when handling hot containers	2.26 kg (5 lb.) in Aluminum or steel baking pan.	All material shall be pre-tested before use. Contact Chemical Laboratory to determine if Contractor's lots have been pre-tested.
2481	Waterproofing Materials Membrane Waterproofing System	3757	Visual Inspection	1 per shipment (Membrane Only)	0.1 m <sup>2</sup> (1 Sq Ft)	Only waterproofing systems from approved sources are allowed for use. The most current list can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a> Membrane Waterproofing System: The manufacturer shall submit a one square foot sample of the membrane along with a letter of Certification and test results stating that the membranes meet the requirements of this specification. Other components of the waterproofing system do not need to be sampled for testing.

Schedule of Materials Control

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2481	Waterproofing Materials Three Ply System Asphalt Primer	3165	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Waterproofing Asphalt	3166	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Fabric	3201	Visual Inspection	1 per shipment	1 m <sup>2</sup> (1 Sq yd)	
2582	Waterborne Latex Traffic Marking Paint.	3591	Visual Inspection	1 per lot	0.5 L (1 pint)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>
2582	Epoxy Traffic Paint	3590	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>
2582	Traffic Marking Paint	Special Provisions	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at <a href="http://www.dot.state.mn.us">www.dot.state.mn.us</a> For traffic marking paints other than Waterborne Latex and Epoxy. See Special Provision for Approved Products List.
2564	Non-Traffic Striping Paints	3500 Series Special Provisions	Visual Inspection	For pre-approved paints submit Form 02415 listing batch number. Call Chemical Laboratory for pre-approved lots	0.5 L (1 pint)	<b>Form 02415</b> List batch numbers and retain Certification of Compliance. For all others, see Special Provisions. Send color sample to Chemical Laboratory for color matching.

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2478	Bridge Structural Steel Paint	3520	Visual Inspection	Certificate of Compliance with each batch/lot for each component of the paint system to the Engineer.  Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.		<b>Form 02415</b> List batch numbers and retain Certificate of Compliance. Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at <a href="http://www.dot.state.mn.us/">www.dot.state.mn.us/</a> .
	Exterior Masonry Paint	3584	Visual Inspection	1 per lot  Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.	0.5 L (1 pint)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance  Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at <a href="http://www.dot.state.mn.us/">www.dot.state.mn.us/</a>
	Noise Wall Stain	Special Provisions	Visual Inspection	Certificate of Compliance for each batch/lot of paint. Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.		<b>Form 02415</b> List batch numbers and retain Certificate of Compliance  Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at <a href="http://www.dot.state.mn.us/">www.dot.state.mn.us/</a>
2582	Drop-on Glass Beads	3592	Visual Inspection	1 per lot	1 L (qt.)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance Only glass beads from Approved Products List are allowed for use. The most current Approved Products List can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>
2502 2581 2582	Pavement Marking Tape	3354 3355 Special Provisions	Visual Inspection	1 clean sample of each color per lot	3 m (3 yds.)	<b>Form 02415</b> List batch numbers and retain Certificate of Compliance. Only pavement marking tape from Approved Products List are allowed for use. The most current Approved Products List can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>



Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2540 2563 2564 2565 2582	Signs and Markers	3352	Visual Inspection	None unless material suspect		<b>Form 02415</b> Only Signs and Markers from Qualified Products List are allowed for use. The most current Qualified Products List can be found at <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>

VII. Metallic Materials and Metal Products

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2554	1. Guard Rail A. Fittings - Splicers, Bolts, etc.	3381	Visual Inspection	Bolts: 2 Post bolts and 4 splice bolts with nuts for each 1,000 units or less.		<b>Form 02415 or 2403</b> To be approved before use. Pre-tested or Inspected will carry "Inspected" tag. For non-pre-tested: Submit laboratory samples at required laboratory rate. For small quantities, lab samples not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less Terminals - 10 or less Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1.B.ii. Non-High Tension Guard Rail Cable	3381	Visual Inspection	1 sample from each spool	1.2 m (4 ft)	<b>Form 02415 or 2403</b> To be approved before use. Pre-tested or Inspected will carry "Inspected" tag. For non-pre-tested: Submit lab samples at required rate. For small quantities, lab samples not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less, Terminals 10 or less, Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1. B.ii. High Tension Guard Rail Cable	Special Provisions	Visual Inspection	1 sample per 50,000 feet	1.2 m (4 ft)	
2554	1. Guard Rail C. Structural Plate Beam	3382	Visual Inspection	One sample from one edge of each 200 rail sections or one sample of each 100 terminal sections	Full depth x 0.25 m (full depth x 10")	<b>Form 02415 or 2403</b> To be approved before use. Pre-tested or inspected will carry "Inspected" tag. For non-pre-tested: submit lab samples at required lab rate. For small quantities, samples not required, & document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less, Terminals 10 or less, Post Bolts - 100 or less, Splice Bolts - 100 or less

## VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2554 2564	2. Steel Sign Posts	3401	Visual Inspection & Certification from Contractor of compliance with Domestic source requirement under 1601, if applicable.	Two posts per shipment of each mass per unit length.	See note	<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. Submit shortest full sized length of each weight, not a scrap piece.
2554 2557	3. Posts for Traffic & Fence A. Steel Fence Posts: Ground and Rail	3403 3406	Visual Inspection, Receiving Paperwork, and for Fence, Certification Form for Type of Fence used.	One sample per 500 pieces. Submit paperwork with sample.		<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. Need full length for posts used in the ground (line, terminal, "C" and anchor posts), not scrap pieces. Need 5' length of top rail and brace bar. See link for certification form on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>
2557	3. Fence B. Components: includes: cup, cap, nut, bolt, end clamp, tension band, truss rod tightener, hog ring, tie wire, tension stretcher bar, truss rod, clamp, & tension wire	3376	Visual Inspection & Fence Certification Form for Type of Fence used.	1 each of cup, cap, nut, bolt, end clamp, tension bands, truss rod tightener, 12 hog ring, 6 tie wires, 1 tension stretcher bar; 1 truss rod, cut to 2-foot min. with threaded section, 3 feet tension wire. Submit paperwork with sample.		<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>
2557	3. Fence C. Gates	3379	Visual Inspection & Fence Certification Form for Fence used.	1 per 100 gates. Submit paperwork with sample.	1	<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>
2557	3. Fence D. Barbed Wire Fabric	3376	Visual Inspection, Receiving Papers, and Fence Certification Form for Type of Fence used.	One full height sample per 50 rolls. Submit paperwork with sample.	1 m (3 ft)	<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. See link for cert. form on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>
2557	3. Fence E. Woven Wire Fabric	3376	Visual Inspection, Receiving Papers, & Fence certification Form for Type of Fence used.	One full height sample per 50 rolls. Submit paperwork with sample.	1 m (3 ft)	<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. See link for cert. form right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>

## VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2557	3. Fence F. Chain Link Fabric	3376	Visual Inspection, Receiving Papers, and Fence Certification Form for Type of Fence used.	One full height sample for each 5,000 ft of fencing. Submit paperwork with sample.	0.3 m (1 ft)	<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, <a href="http://www.dot.state.mn.us/materials/lab.html">www.dot.state.mn.us/materials/lab.html</a>
2402	4. Water Pipe and other Piping Materials	3364, 3365, 3366 & Special Provisions				<b>Form 02415 or 2403</b> Most projects have a domestic steel requirement under 1601 Special Provision. To be identified & tested if necessary prior to use. See Special Provisions.
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel A. Bars – Uncoated	3301	Visual Check for Size and Grade Marking	No Field Sample Necessary		<b>Form 02415 or 2403</b> For Uncoated bars - Retain Certificate of Compliance and Certified Mill Analysis in Project File.

## VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel B. Bars - Epoxy Coated	3301	Visual Check for Size and Grade Marking and "Inspected" tag (See Remarks)	One sample (1 bar) of each size bar for each day's coating production	1 m (3 ft)	<b>Form 02415 or 2403</b> For Epoxy-Coated bars, steel will be tagged "Inspected" when it has been sampled and tested by Mn/DOT prior to shipment, and it will be tagged "Sampled" when testing has not been completed prior to shipment. If the Epoxy-Coated bars are not tagged "Sampled" or "Inspected", submit samples, Certificate of Compliance, and Certified Mill Analysis.
2401	5. Reinforcing Steel C. Bars Stainless Steel	Special Provisions		One sample (2 Bars) per heat per bar size	1 m (3 ft)	Mill Tests Reports shall be supplied with samples, see Special Provisions.
2401 2411 2452 2472 2564	5. Reinforcing Steel D. Spirals	3305		One per shipment	1 m (3 ft)	
2201 2301 2401 2411 2412 2472 2531	5. Reinforcing Steel E. Steel Fabric	3303	Visual Inspection	No Field Sample Necessary		Retain Certificate of Compliance in project file.
2201 2301 2401 2411	5. Reinforcing Steel F. Dowel Bars	3302		One Dowel Bar from each shipment	Full Size Dowel Bars	For all types of dowels – Each project shall have a Certificate of Compliance from the Manufacturer certifying that all materials used in fabrication of the dowel bars and baskets comply with all applicable specifications. The Manufacturer shall maintain all records necessary for certification by project. The Certificate of Compliance shall be submitted to the Project Engineer.

## VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401 2405	5. Reinforcing Steel G. Prestressing or Post-Tensioning Strand	3348		One sample (2 strands) from each heat (see <b>Notes</b> )	1.8 m (6 ft)	Submit one copy of mill certificate and one copy of the stress-strain curve representative of the lot with the samples. For most manufacturers, a heat equals a production lot, and an individual lot, pack, or reel is a subset of a heat/production lot.
2402 2506 2565	6. Drainage and Electrical Castings	3321 2471 2565	Visual Inspection	All castings: Three tensile bars to be cast with each heat at Foundry and submitted to the lab by an approved Foundry*. See 3321.		<b>Form 02415 or 2403</b> Call Maplewood Laboratory at 651-366-5540 for list of approved foundries, or see website. Inspect in the field and retain Form 02415 or 2403 in project file, showing name of foundry and quantity
2401 2402 2411 2433 2545 2554 2564 2565	7. Anchor Rods and Bolts (Cast in Place)	3385	Pre Approved			Notes: Manufacturer must have one yearly passing test from the Department for each anchor rod or bolt type. Prior to installation, obtain copy of Mn/DOT passing test report from supplier. Specs 3385.2 A, B, & C require anchor rod markings per ASTM F 1554 S3. The end of each anchor bolt intended to project from the concrete must be die stamped with the grade identification as follows: Grade 36 = AB36, Grade 55 = AB55, Grade 105 = AB105.
2401 2411 2433	8. Anchorages (Drilled In)	Special Provisions	Visual Inspection	Three complete anchorages		Note: Before installation, verify that anchorages are on the qualified products list <a href="http://www.dot.state.mn.us/products">www.dot.state.mn.us/products</a>
2402 2405	9. Structural Steel A. For Concrete Girders-Diaphragms and sole plates	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	Form 02415 or 2403 Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply diaphragms and sole plates. A list of approved suppliers can be found on the Bridge Office web site.

## VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402	9. Structural Steel B. Steel Bearings	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	<b>Form 02415 or 2403</b> Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply steel bearings. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel C. Expansion joints	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	<b>Form 02415 or 2403</b> Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply expansion joints. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel D. Railing-Structural tube and ornamental	2471	Field inspection: Check for damage and defects, especially the coating. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	<b>Form 02415 or 2403</b> Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply structural tube and ornamental railing. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel E. Drainage Systems	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	<b>Form 02415 or 2403</b> Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans (QCP's) shall only be used to supply drainage systems. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel F. Protection Angles	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	<b>Form 02415 or 2403</b> Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans (QCP's) shall only be used to supply protection angles. A list of approved suppliers can be found on the Bridge Office web site.

## VIII. Miscellaneous Materials

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2403 2422 2452 2521 2540 2545 2554 2557 2564	1. Timber, Lumber Piling & Posts	3412 to 3471 & 3491	Visual Inspection			<b>Form 02415 or 2403</b> Untreated materials shall be inspected in the field and the results reported on Form 02415 or 2403. Treated materials shall be Certified on the Invoice or Shipping Ticket. Material is inspected and stamped by an Independent Agency as per Specification 3491. Contact Laboratory for additional information.
2402 2405 2557 Many	2. Miscellaneous pieces and Hardware (Galvanized)	3392 3394		3 samples of each item per shipment. Sample critical items only. (Critical items are load bearing, structurally necessary items.)	Three of each type.	<b>Form 02415 or 2403</b> Will carry "Inspected" tag if sampled and tested prior to shipment. No sample necessary if "Inspected".
2504	3. Insulation Board	3760	Visual Inspection	None		<b>Form 02415 or 2403</b>
2402	4. Elastomeric Bearing Pads	3741 and Special Provisions	Check dimensions Check repair of tested pad	One sample, with one or more internal plates annually from each manufacturer.	Full size pad	Submit copy of Certificate of Compliance with pad. Do not use any pads that are not certified.

## IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402 2422 2501 2503 2506	1. Corrugated Metal Products A. Culvert Pipe Underdrains Erosion control Structures	3225 thru 3229, 3351 and 3399	Visual Inspection: Check for good construction, workmanship, finish requirements and shipping			<b>Form 02415 or 2403</b> Make certain pipe is Certified on Invoice
2501	1. Corrugated Metal Products B. Structural Plate	3231	Visual Inspection: Invoice shall include notation that material described is in accordance with fabricator's Certificate and Guarantee			<b>Form 02415 or 2403</b>

Schedule of Materials Control  
IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2501	1. Corrugated Metal Products C. Aluminum Structural Plate	3233				The Fabricator's Certificate and Guarantee shall be on file in the Mn/DOT Central Laboratory.
2503 2506	2. Clay Pipe	3251	No samples required for less than 100 pieces	1 sample per 200 pieces of each size.	Full Size Pipe	<b>Form 02415 or 2403</b> To be sampled and inspected in the field.
2501 2503 2506	3. Concrete Pipe A. Reinforced Pipe and Arches Precast Cattle Pass Units Sectional Manhole Units	3236	Field Inspection: Check for damage and defects. Check dimensions as required. Check for producer's "Certified" stamp and signature on the certification document.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		<b>Form 02415 or 2403</b> For Concrete Pipe Both A & B: Product will be certified by producer, only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used
2503 2506	3. Concrete Pipe B. Non-Reinforced Concrete Pipe	3253	Field Inspection: Check for damage and defects. Check dimensions as required. Check for producer's "Certified" stamp and signature on the certification document.	2 samples of each size from each source <u>unless inspected and stamped at source.</u>	Full Size Pipe	<b>Form 02415 or 2403</b>
2501 2503 2506	3. Concrete Pipe Fine Aggregate	3126		1 quality test per month during production for A and B above.	10 kg. (25 lb.)	
2501 2503 2506	3. Concrete Pipe Coarse Aggregate	3137		1 quality test per month during production for A and B above.	10 kg. (25 lb.)	



## IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2412	4. Precast/Prestressed Concrete Structures A. Reinforced Precast Box Culvert	3238	1 Air test per day (1st load), 2 cylinders per pour for positive slump concrete (1 for handling, 1 for shipping).	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate	3126		1 quality test per month during production.	10 kg. (25 lb.)	
	Coarse Aggregate	3137		1 quality test per month during production.	10 kg. (25 lb.)	
2405	4. Precast/Prestressed Concrete Structures B. Precast/Prestressed Concrete Structure (beams, posts, etc.).	2405	1 air test per day (1st load), 2 cylinders per pour for positive slump concrete (1 for handling, 1 for shipping).	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate	3126	Gradation: 1 per 150 m <sup>3</sup> (200 Cu. yd.) or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	10 kg (25 lb.)	
	Coarse Aggregate	3137	Gradation: 1 per 75 m <sup>3</sup> (100 Cu yd) or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	10 kg (25 lb.)	

## IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	5. Manholes and Catch Basins (Construction)	2506 3622	Field Inspection: Check for damage and defects. Check dimensions as required. Check for Producer's "Certified" stamp and signature on the certification document.			<b>Form 02415 or 2403</b> Product will be certified by producer or inspected, tested and stamped at source. Only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used (bricks, blocks, precast, or combination).
2502	6. Drain Tile (Clay or Concrete)	3276	Visual Inspection	2 samples of each size from each source		
2502 2503	7. Thermoplastic (TP) Pipe ABS and PVC	3245	Obtain Certificate of compliance. Check for approved marking printed on pipe. Field Inspect for damage or defects.			<b>Form 02415 or 2403</b> See Spec. 3245 for specific AASHTO or ASTM Pipe types are approved under this specification. If perforated, holes should be 5mm - 10 mm (3/16 - 3/8 inch) diameter, two rows for 4", and four rows for 6" diameter; approximately 75 mm (3 inches) on center.
2502	8. Corrugated Polyethylene Pipe – Single wall for edge drains, etc.	3278	Check for markings (AASHTO M 252) Certificate of Compliance. Field Inspect for damage or defects.	No Laboratory tests required		<b>Form 02415 or 2403</b>
2503	9. Sewer Joint Sealing Compound	3724		One per shipment	0.5 liter (1 pt.)	
2412 2501 2503	10. Preformed Plastic Sealer for Pipe	3726 Type b		One from each source	0.3 m (1 ft)	
2412 2501 2503	11. Bituminous Mastic Joint Sealer for Pipe	3728	Visual Inspection	Sample, if questionable		

## IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105	12. EPS Geofoam	Special Provisions	Visual Inspection Check for yellow aged material, uniformity and dimensions. Weigh 1'x1'x1' cut coupon to verify density every 200 m <sup>3</sup> (250 yd <sup>3</sup> )			Form 02415 or 2403
2501 2503	13. Corrugated Polyethylene Pipe – Dual Wall, 12” – 48”	3247				For Specification 3247, Corrugated Polyethylene Pipe (HDPE) manufacturing facilities are required to be reviewed yearly and in compliance with AASHTO's National Transportation Product Evaluation Program (NTPEP) for producers of AASHTO M294 HDPE pipe. To determine if a pipe manufacturing plant is qualified, click on the following link for M294 pipe. <a href="http://archive.data.ntpep.org/nep/statusReport_PlasticPipe.aspx">http://archive.data.ntpep.org/nep/statusReport_PlasticPipe.aspx</a> If a plant has a compliant NTPEP audit for AASHTO M294 pipe at the time the pipe is manufactured, then the plant has met requirements. Note that a previous year's audit shall govern until NTPEP issues the next year's audit. A Certificate of Compliance shall be provided in accordance with Specification 1603.

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105 2411 2412 2501 2502 2511 2512	14. Geotextile Fabric and Geogrid Reinforcement	3733 and Special Provisions	Inspect for damage and uniformity of texture. Rolls of both geotextile and geotextile wrapped PE Tubing must be wrapped in UV protective plastic. (Usually Black). Obtain Certificate of Compliance (see Note 1).	(a) 1 per 15,000 m (50,000 LF) or fraction thereof for pipe wrap or trench lining for Permeable base designs. (b) 1 per 8000 m <sup>2</sup> (10,000 sq. yd.) or fraction thereof of each type fabric or geogrid for all other uses. (see Note 2). (c) Sewn seam, if required, 1 per project minimum, additional as appropriate.	(a) 3m (10 Lin. Ft.) (b) 3m <sup>2</sup> (4 sq. yd.)* (c) 3m (10 Lin. Ft.)**	<p>Certificate of Compliance shall state material identification (e.g. Propex 2002, Miragrid 8XT), and minimum average roll values (MARV) for all specified geotextile properties. MARV values must meet the Specification 3733 Types 1 through 7 requirements for the specific application. Submit copy of Certificate with material samples sent to the Materials Laboratory.</p> <p>Submit additional sample(s), if the manufacturer or model of geotextile or geogrid used changes during construction.</p> <p>Sampling shall be by random selection and no more than one sample shall be taken from an individual roll. For type 6 applications (including geogrids), submit pages of Special Provisions that list required material properties. (Type 6 requirements are job specific.) For Modular Block Walls or Reinforced Soil Slopes, submit page(s) of shop drawings that reference geogrid/geotextile to be used (product name) and/or required properties. Contact Randy Tilseth, Geotechnical Section, 651-366-5451 for large quantity sampling rates (greater than 40,000 sq. yd. of material on project), small quantity testing, and questions.</p> <p>* Do not sample first full turn of rolled product. ** Seam sample to include approximately 1 m (3 ft.) of geosynthetic material on each side of seam (in direction perpendicular to seam).</p>

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	1. Brick A. Sewer (clay) and Building	3612 to 3615	Visual Inspection	One sample per 50,000 brick or fraction thereof	6 whole bricks	
2506	1. Brick B. Sewer (Concrete)*	3616	Visual Inspection	One sample per shipment.	6 whole bricks	* Air entrainment required. Obtain air content statement from supplier.
2506	2. Concrete Masonry Units A. For Sewer Construction	3621	Visual Inspection	One sample per shipment	6 whole units	Air entrainment required. Obtain air content statement from supplier.
2411	2. Concrete Masonry Units B. For Modular Block Retaining Walls	Special Provisions	Visual Inspection Check for cracks and broken corners	One sample per 10,000 units or fraction thereof, with a minimum of one sample per product (block) type per contract.*	5 whole units	All lots of block upon delivery shall have Manufacturer or Independent laboratory test results to verify passing both compression and freeze-thaw requirements. * Wall units and cap units are considered separate block types.
2422	3. Reinforced Concrete Cribbing	3661	Concrete control tests Air Tests Visual Inspection if previously tested	One cylinder per 100 units, but not less than 5 cylinders for a given contract. Other materials as required herein.	150 x 300mm (6 x 12 in) Cylinders	Form 02415 or 2403 Will be stamped when inspected prior to shipment.
2511 2512 2577	4. Stone for Masonry or Rip-Rap	3601 and Special Provisions	Visual Inspection Submit Form 02415 unless special testing is specified			Form 02415 or 2403 Each source shall be approved by Project Engineer or Supervisor for quality, prior to use. For questions on quality, contact District Materials or Geology Unit.

## XI. Electrical and Signal Equipment Items

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545	1. Lighting Standards (Aluminum or Steel)	3811	Visual Inspection			The Fabricator will submit "Certificate of Compliance", on a per project basis, to the Structural Metals Engineer.
2545 2550 2565	2. Hand Holes (Precast, PVC, and LLDPE)	2545 2550 2565				Form 02415 or 2403 Traffic signals and street lighting projects require handholes and frames and covers to be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for signal. For cast iron frame and cover: see VII.6, Drainage Castings
2545 2565	3. Foundation	2545	Slump as needed	1 cylinder per 20 m <sup>3</sup> (25 Cu. yd.)		Rebar is required in concrete foundations as specified in the Contract documents for all traffic signal and street lighting projects.
2402 2545 2565	4. Conduit and Fittings A. Metallic	3801 3802	Visual Inspection	None		Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File
2545 2565	4. Conduit and Fittings B. Non-Metallic (Rigid and HDPE)	3803 Special Provisions	Visual Inspection			Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File. For traffic signal and street lighting projects, specific requirements are contained in the Special Provisions for each project.
2545 2565	5a. Anchor bolts (cast in place)	2545 2565				See section VII, 7.
2545	5b. Anchorages (Drilled In)	2545				See section VII, 8.

## XI. Electrical and Signal Equipment Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2565	6. Miscellaneous Hardware	2545 2565	Visual Inspection	Sample critical items only. One of each item per shipment. (Critical Items are load bearing, structurally necessary items.)		Will carry "Inspected tag if sampled and tested prior to shipment. No sample necessary if "Inspected". Do not use if not tested. Field sample at sampling rate for laboratory testing. For traffic signal and street light lighting projects, various miscellaneous hardware is required to be listed on the Mn/DOT Signals and Lighting Approved/Qualified Products Lists (A/QPL). The Contract documents indicate which items must be on the Signals and/or Lighting APL.
2545 2550 2565	7. Cable and Conductors A. Power Conductors Loop Detector Conductors (No Tubing)	3815.2B1 3815.2B2(a)	Visual Inspection	None		Form 02415 or 2403 Make certain the conductors are the type specified. Submit Field Inspection report showing type and quantities used. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type where applicable.
2545 2550 2565	7. Cable and Conductors B. Electrical Cables and Single Conductors with Jacket	3815.2B2(b) 3815.2B3 3815.2B5 3815.2C1 3815.2C3 3815.2C4 3815.2C5 3815.2C6 3815.2C7 3815.2C8 3815.2C14 Special Provisions	Visual Inspection	1 sample per size per lot	1.5m (5 ft)	<b>Form 02415 or 2403</b> Usually inspected at the distributor. Documentation showing project number, reel number(s), & Mn/DOT test number(s) will be included with each project shipment. If such documentation is not received from Contractor, submit sample for testing along with material certification from manufacturer. Do not use if not tested. Pre-inspected materials will not be tagged; an inspection report will be sent by the Mn/DOT inspector for each shipment. Project inspectors should verify that the shipping documents agree with this inspection report. Call Steve Grover at 651-366-5540 or Cindy Schellack at 651-366-5543 with questions. For traffic signal and street lighting projects, the Special Provisions for each project contain electrical cable and conductor specifications.
2545 2550 2565	7. Cable and Conductors C. Fiber Optic Cables	3815.2C13	Visual Inspection	1 sample per size per lot	1.5m (5 ft)	<b>Form 02415 or 2403</b> Fiber optic cables shall be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for Traffic Management Systems/ITS.

## XI. Electrical and Signal Equipment Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2565	8. Ground Rods	2545 2565	Visual Inspection	None.		<b>Form 02415 or 2403</b> Retain Form 02415 or 2403 in project file. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL).
2545	9. Luminaires and Lamps	3810				<b>Form 02415 or 2403</b> Traffic signal and street lighting projects require luminaires and lamps to be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for Lighting. The conductors shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type, where applicable.
2545	10. Electrical Systems					Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report. To be certified by the Project Engineer.
2565	11. Traffic Signal Systems	2565				Traffic Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report. To be certified by the Project Engineer.



# **EQUAL EMPLOYMENT OPPORTUNITY (EEO) SPECIAL PROVISIONS**

This section of Special Provisions contains the Equal Employment Opportunity (EEO) rules and regulations for highway construction projects in Minnesota which are federally and/or State funded.

The source of funding determines which EEO regulations and goals (Federal and/or State goals) apply to a specific project. When a project contains funding from both Federal and State sources, both sets of regulations apply, and the Minnesota Department of Transportation (Mn/DOT) monitors and reviews projects at both levels.

If the project contains any Federal funding, and has a total dollar value exceeding \$10,000, Federal EEO regulations and goals apply (pages 2, 6, 7-8, 9-14, 15, 16-17, 22-26, 27-38). The Mn/DOT Office of Civil Rights monitors and reviews these projects on behalf of the Federal Highway Administration (FHWA), under Federal statutes (23 USC 140) and rules (23 CFR 230).

If the project contains any State funding, and has a total dollar value exceeding \$100,000, State EEO regulations and goals apply (pages 2, 3, 4, 5, 6, 9-14, 16-22). Mn/DOT's Office of Civil Rights monitors and reviews these projects in conjunction with the Minnesota Department of Human Rights under Minnesota Statutes §363A.36 and its accompanying rules.

Mn/DOT has established a single review and monitoring process which meets both Federal and State requirements.

Please note that Pages 23-38 of these Special Provisions may be omitted from projects with no Federal funding.

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**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION  
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY  
(23 USC 140, 23 CFR 230 and Minnesota Statute 363A.36)**

1. The offerer's or bidder's attention is called to the "Minnesota Affirmative Action Requirements" (EEO Page 4), the "Specific Federal Equal Employment opportunity Responsibilities" (EEO Pages 7-8), the "Standard Federal and State Equal Employment Opportunity Construction Contract Specifications" (EEO Pages 9-14), the "Equal Opportunity Clause" (EEO Page 15) and "Required Contract Provisions - Federal-Aid Construction Contracts" (EEO Pages 27-37).
2. The goals and timetables for minority and women participation, expressed in percentage terms of hours of labor for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as shown on EEO Pages 16-17.

These goals are applicable to all the Contractor's construction work (whether or not it is State or State assisted, Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the regulations in 41 CFR Part 60-4, and/or Minnesota Statutes §363A.36 and its accompanying rules shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) for Federal or federally assisted projects, and Minnesota Statutes §363A.36, and its accompanying rules for State or State assisted projects, and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and women employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and women employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4 for Federal or federally-assisted projects and/or Minnesota Statutes §363A.36 and its accompanying rules for state or state-assisted projects. Compliance with the goals will be measured against the total work hours performed.

3. If the contract is federally funded, the Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within ten working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. If the contract is state funded, the Contractor shall provide written notification to the Compliance Division, Minnesota Department of Human Rights, Army Corps of Engineers Centre, 190 E 5th Street, Suite 700, St. Paul, Minnesota 55101 within ten working days of award of any construction subcontract in excess of \$100,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number of the Subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the county or counties of the State of Minnesota where the work is to be performed.

## **NOTICE TO ALL PRIME AND SUBCONTRACTORS PRE-AWARD REPORTING REQUIREMENTS**

In order to ensure compliance with Federal and State laws and regulations (23 USC 140, and 23 CFR 230, and Minnesota Statutes §363A.36) and to ensure Mn/DOT's ability to monitor and enforce compliance efforts, the following requirements apply if the apparent low bid exceeds \$ 5,000,000.00:

- 1) The Apparent Low Bidder ("ALB") must provide to Mn/DOT the "EEO-8 Form" (also entitled "EEO Compliance Review Report"), which must provide detail on the contractor's total company workforce in the State of Minnesota during the twelve month period preceding July 30<sup>th</sup> of the previous year (Office and/or clerical personnel need not to be included).
- 2) The ALB must provide to Mn/DOT a work plan for meeting the minority and women employment goals established by the Minnesota Department of Human Rights, for the project in question. The work plan must include, at a minimum (1) how the ALB will incorporate its current minority and women employees in the ALB's efforts to meet the established goals; and (2) a contingency plan if the ALB has determined that its current workforce is not sufficient in order to achieve the established employment goals. If the ALB relies in whole or in part upon unions as a source of employees, then the ALB must (1) include a list of established organizations that are likely to yield qualified minority and women candidates if those union(s) are unable to provide a reasonable flow of minority and women candidates in their work plan; and (2) document the method by which these organizations will refer candidates to the ALB for employment opportunities. All bidders are hereby notified that the U.S. Department of Labor has determined that a contractor will not be excused from complying with the Federal and State laws and regulations cited above based solely on the fact that a contractor has a collective bargaining agreement with a union providing for the union to be the exclusive source of referral and that the union failed to refer minority employees. A contractor may obtain a list of organizations likely to yield qualified minority and women candidates from the Mn/DOT Office of Civil Rights.
- 3) The ALB must provide to Mn/DOT the ALB's total workforce and labor projections for the project (represented in hours), the ALB's projected total number of minority hours for the project, and the ALB's projected total number of women hours for the project. The details must include the trade(s) that will be utilized in order to complete the project.

The ALB must submit documents as required to comply with this section no later than five business days after the date that bids for the contract are opened. The five day period starts the business day following the date that bids were opened. The required documents must be received prior to Contract Award, and must be sent to the Mn/DOT Office of Civil Rights – 395 John Ireland Blvd., Mail Stop 170 St. Paul, MN 55155-1899. Submittal of the documents described in (1), (2) and (3) is required for contract award to the ALB. The submitted documents will be used as a tool to assist contractors in meeting employment goals; the content itself will not be evaluated for the purpose of determining contract award.

## MINNESOTA AFFIRMATIVE ACTION REQUIREMENTS

1. It is hereby agreed between the parties to this contract that Minnesota Statutes, Section §363A.36, and its accompanying rules are incorporated into any contract between these parties based upon this specification or any modification of it. A copy of Minnesota Statutes, Section §363A.36, and its accompanying rules is available upon request from the contracting agency. The Contractor hereby agrees to comply with the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.
2. It is hereby agreed between the parties to this contract that this agency requires that the Contractor meet affirmative action criteria as provided for by Minnesota Statutes §363A.36 and its accompanying rules. It is the intent of the Minnesota Department of Transportation to fully carry out its responsibility for requiring affirmative action, and to implement sanctions for failure to meet these requirements. Failure by a contractor to implement an affirmative action plan, meet project employment goals for minority and women employment or make a good faith effort to do so may result in revocation of his/her Certificate of Compliance or suspension or revocation of the contract (Minnesota Statutes §363A.36).
3. Under the affirmative action obligation imposed by the Human Rights Act, Minnesota Statutes, Section §363A.36, contractors shall take affirmative action to employ and advance in employment minority, female, and qualified disabled individuals at all levels of employment. Affirmative action must apply to all employment practices, including but not limited to hiring, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor shall recruit, hire, train and promote persons in all job titles, without regard to race, color, creed, religion, sex, national origin, marital status, status with regard to public assistance, physical or mental disability, sexual orientation or age except where such status is a bona fide occupational qualification. These affirmative action requirements of the Minnesota Human Rights Act are consistent with but broader than the Federal requirements as covered in this contract.
4. Affirmative Action for disabled workers. The Contractor shall not discriminate against any employee or applicant for employment because of a physical or mental disability in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled individuals without discrimination based upon their physical or mental disability in all employment practices such as employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training (including apprenticeship). In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with Minnesota Statutes, section §363A.36 and the rules and relevant orders of the Minnesota Department of Human Rights pursuant to the Minnesota Human Rights Act.
5. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the commissioner of the Minnesota Department of Human Rights. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment minority, women and qualified disabled employees and applicants for employment, and the rights of applicants and employees. **A poster entitled "Contractor Non-discrimination is the Law" may be obtained from: Compliance Unit, Minnesota Department of Human Rights, Army Corps of Engineers Centre, 190 E. 5th Street, Suite 700, St. Paul, Minnesota 55101. (651) 296-5663, TTY 296-1283, Toll Free 1-800-657-3704.**
6. The Contractor shall notify each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Minnesota Statutes, section §363A.36 of the Minnesota Human Rights Act, and is committed to take affirmative action to employ and advance in employment minority, women and qualified physically and mentally disabled individuals.

## **APPROPRIATE WORK PLACE BEHAVIOR ON Mn/DOT CONSTRUCTION PROJECTS UTILIZING STATE FUNDS**

It is the Minnesota Department of Transportation's (Mn/DOT's) policy to provide a workplace free from violence, threats of violence, harassment and discrimination. Mn/DOT has established a policy of zero tolerance for violence in the workplace. Contractors who perform work on Mn/DOT construction projects, or local government entities or public agencies utilizing state funds on highway construction projects, shall maintain a workplace free from violence, harassment and discrimination (See definitions, below).

### **Definitions:**

1. Violence is the threatened or actual use of force which results in or has a high likelihood of causing fear, injury, suffering or death. Employees are prohibited from taking reprisal against anyone who reports a violent act or threat.

2. Harassment is the conduct of one employee (toward another employee) which has the purpose or effect of 1) unreasonably interfering with the employee's work performance, and/or 2) creating an intimidating, hostile or offensive work environment. Harassment is not legitimate job-related efforts of supervisor to direct/evaluate an employee or to have an employee improve work performance.

A. Unlawful discriminatory harassment is harassment which is based on these characteristics: race, color, creed, religion, national origin, sex, disability, age, marital status, status with regard to public assistance or sexual orientation. Managers, supervisors and employees shall not take disciplinary or retaliatory action against employees who make complaints of sexual harassment.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, or sexually motivated physical contact, or other verbal or physical conduct or communication of a sexual nature, when submission to that conduct or communication is 1) made a term or condition, either explicitly or implicitly, of obtaining employment; or 2) is used as a factor in decisions affecting an individual's employment; or 3) when that conduct or communication has the purpose or effect of substantially interfering with an individual's employment or creating an intimidating, hostile or offensive work environment, and the employer knows or should have known of the existence of the harassment and fails to take timely and appropriate action. Examples include but are not limited to insulting or degrading sexual remarks or conduct; threats, demands or suggestions that status is contingent upon toleration or acquiescence to sexual advances; displaying in the workplace sexually suggestive objects, publications or pictures, or retaliation against employees for complaining about the behavior cited above or similar behaviors.

B. General harassment is harassment which is not based on the above characteristics. Examples may include, but are not limited to: physically intimidating behavior and/or threats of violence; use of profanity (swearing), vulgarity; ridiculing, taunting, belittling or humiliating another person; inappropriate assignments of work or benefits; derogatory name calling.

3. Discrimination includes actions which cause a person, solely because of race, color, creed, religion, national origin, sex, disability, age, marital status, status with regard to public assistance or sexual orientation to be subject to unequal treatment.

Prime Contractors who work on Mn/DOT projects shall ensure that their managers, supervisors, foremen/women and employees are familiar with Mn/DOT's policy on appropriate work place behavior; and shall ensure that their subcontractors are familiar with this policy. Managers, supervisors and foremen/women will respond to, document, and take appropriate action in response to all reports of violence, threats of violence, harassment or discrimination. Failure to comply with this policy may result in cancellation, termination or suspension of contracts or subcontracts currently held and debarment from further such contracts or subcontracts as provided by statute. If you need additional information or training regarding this policy, please contact the Office of Civil Rights at (651) 366-3073.

## NOTICE TO ALL PRIME AND SUBCONTRACTORS REPORTING REQUIREMENTS

1. In order to monitor compliance with Federal Statutes 23 USC 140 and 23 CFR 230, and Minnesota Statutes §363A.36, all prime contractors and subcontractors are required to complete a Mn/DOT Monthly Employment Compliance Report each month for each project (Form EEO-13, sample copy at EEO Pages 20-21.) Prime contractors are also required to complete a Contractor Employment Data Report (Form EEO-12, sample copy at EEO Pages 18-19) once prior to work commencing on the project, unless one has been completed already within the calendar year.

The prime contractor of each project collects Monthly Employment Compliance Reports from each subcontractor who performed work during the month, and completes a Monthly Employment Compliance Report on its own work force. **For the month of July only, an EEO-13 is required for each payroll period within the month of July.** The prime contractor submits the EEO-13 forms to the Mn/DOT Project Engineer by the 15th day of the subsequent month.

Failure to submit the required reports in the allowable time frame will be cause for the imposition of contract sanctions.

It is the intent of Mn/DOT to implement monitoring measures on each project to ensure that each prime contractor and subcontractor is promoting the full realization of equal employment opportunities. Any project may be scheduled for an in depth on-site contract compliance review. During the scheduled on-site review, the Contractor will be required to provide to Mn/DOT documentation of its "good faith efforts" as shown in EEO Pages 10-13, at 7 a-p of this contract.

2. If a Federally funded project requires On-the-Job-Training (OJT) participation, information is provided in the contract and can be located by referring to the Table of Contents for Division S. (OJT is also listed as a bid line item under Trainees.) When a contract requires OJT participation, the Prime Contractor shall submit a training plan as indicated in the Proposal. The training plan shall include the job classification titles of trainees, planned training activities and the approximate start date of trainees.
3. When a Contractor selects a trainee applicant for OJT, the Contractor completes an On the Job Training Program-Trainee Assignment form (sample copy at EEO Page 23) and submits it to the Contract Compliance Specialist (CCS) assigned to the project for approval. The CCS notifies the Contractor and Project Engineer when the applicant is approved.
4. Hours of work performed by OJT employees shall be documented on a monthly basis on the Certification of On-The-Job Training Hours form, (Mn/DOT Form No. 21860, sample copy at EEO Page 24). The Contractor shall submit the original and one copy to the Project Engineer, and one copy to the CCS assigned to the project.

Do not remove forms from this contract. Please duplicate forms from the copies in this contract, or the Mn/DOT Office of Civil Rights will provide these forms upon request. Please call the Office of Civil Rights, (651) 366-3073.

# **SPECIFIC FEDERAL EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES**

## **(23 CFR 230, Subpart A, Appendix A, FAPG June 6, 1996)**

### **1. General.**

**a.** Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required contract Provisions (Form PR-1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

**b.** The contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

**c.** The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of \$10,000 or more, will comply with the following minimum specific requirement activities of equal employment Opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of \$10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

### **2. Equal Employment Opportunity Policy.**

The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote their full realization of equal employment through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre apprenticeship, and/or on-the-job training.

**3. Equal Employment Opportunity Officer.** The contractor will designate and make known to State highway agency

contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

### **4. Dissemination of Policy.**

**a.** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action will be made fully cognizant of, and will implement, the contractor's equal employment opportunity policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

(1). Periodic meetings of supervisory and personnel office staff will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

(2). All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

(3). All personnel who are engaged in direct recruitment for the project will be instructed by the EEO officer or appropriate company official in the contractor's procedures for locating and hiring minority group employees.

**b.** In order to make the contractor's equal employment policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:

(1). Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

(2). The contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

### **5. Recruitment.**

**a.** When advertising for employees, the contractor will include in all advertisements for employees the notation "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

**b.** The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor will, through his/her EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where the implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

**c.** The contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

**6. Personnel Actions.** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed:

**a.** The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

## **SPECIFIC FEDERAL EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES (con=t)**

**b.** The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

**c.** The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

**d.** The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his/her obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all his avenues of appeal.

### **7. Training and Promotion.**

**a.** The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.

**b.** Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e. apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.

**c.** The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

**d.** The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

**8. Unions.** If a contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the

unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

**a.** The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group members and women so that they may qualify for higher paying employment.

**b.** The contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.

**c.** The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the State highway department and shall set forth what efforts have been made to obtain such information.

**d.** In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the State highway agency.

### **9. Subcontracting.**

**a.** The contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from

State highway agency personnel.

**b.** The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

### **10. Records and Reports:**

**a.** The contractor shall keep such records as necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:

(1) The number of minority and non minority group members and women employed in each work classification on the project.

(2) The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractor's who rely in whole or in part on unions as a source of their work force),

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and

(4) The progress and efforts being made in securing the services of minority group subcontractors with meaningful minority and female representation among their employees.

**b.** All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the Federal Highway Administration.

**c.** The contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR-1391. If on-the-job training is being required by a "Training Special Provision", the contractor will be required to furnish Form FHWA 1409.



**STANDARD FEDERAL AND STATE EQUAL EMPLOYMENT OPPORTUNITY  
CONSTRUCTION CONTRACT SPECIFICATIONS  
(41 CFR 60-4.3 and Minnesota Statutes 363A.36)**

*Unless noted, the following apply to both Federal/federally assisted projects and State/state assisted projects. Item 3 applies to Federal/federally assisted projects only*

1. As used in these specifications:
  - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
  - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
  - c. "Employer Identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
  - d. "Minority" includes:
    - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
    - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
    - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
    - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 (\$100,000 for State projects) the provisions of these specifications and the Notice which contains the applicable goals for minority and women participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4, 5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work on the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7(a) to (p) of these specifications (itemized as 4 [a] to [o], Minnesota Rules

## **STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS (*con't*)**

5000.3535). The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minorities and utilization the Contractor should (shall, for State or state assisted projects) reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor shall make substantially uniform progress toward its goals in each craft during the period specified. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Federal goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance programs or from Federal procurement contracting officers. State goals are published periodically in the State Register in notice form, and may be obtained from the Minnesota Department of Human Rights or the Minnesota Department of Transportation Office of Civil Rights. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union, with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications and Executive Order 11246 and its associated rules and regulations for Federal or federally assisted projects, and Minnesota Statutes, Section §363A.36 of the Minnesota Human Rights Act, or the rules adopted under the Act for State or state assisted projects.
6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained according to training programs approved by the Minnesota Department of Human Rights, the Minnesota Department of Labor and Industry, or the United States Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications must be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following (referred to in Minnesota Rules 5000.3535 as items 4(a) to (o):
  - (a) Ensure and maintain, or for State or state assisted projects make a good faith effort to maintain, a working environment free of harassment, intimidation, and coercion at all sites and in all facilities at which the Contractor's employees are assigned to work. For

**STANDARD FEDERAL AND STATE EEO CONSTRUCTION  
CONTRACT SPECIFICATIONS (*con 't*)**

Federal or federally assisted projects, the Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or women individuals working at such sites or in such facilities.

- (b) Establish and maintain a current list of minority and women recruitment sources, provide written notification to minority and women recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
- (c) Maintain a current file of the names, addresses, and telephone numbers of each minority and woman off-the-street applicant and minority or woman referral from a union, a recruitment source, or community organization and of what action was taken with respect to each individual. If the individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.
- (d) Provide immediate written notification to the commissioner of the Minnesota Department of Human Rights for State or state assisted projects, or the director of the Office of Federal Contract Compliance for Federal or federally assisted projects, when the union, or unions with which the Contractor has a collective bargaining agreement, has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- (e) Develop on-the-job training opportunities and/or participate in training programs for the areas which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the State of Minnesota for State or state assisted projects or the Department of Labor, for Federal or federally assisted projects. The Contractor shall provide notice of these programs to the sources compiled under (b).
- (f) Disseminate the Contractor's equal employment opportunity policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its equal employment opportunity obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and women employees at least once a year; and by posting the company equal employment opportunity policy on bulletin boards accessible to all employees at each location where construction work is performed.

**STANDARD FEDERAL AND STATE EEO CONSTRUCTION  
CONTRACT SPECIFICATIONS (*con't*)**

- (g) Review, at least annually, the company's equal employment opportunity policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions; including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the first day of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- (h) Disseminate the Contractor's equal employment opportunity policy externally by including it in any advertising in the news media, specifically including minority and women news media, and providing written notification to and discussing the Contractor's equal employment opportunity policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.
- (i) Direct its recruitment efforts, both oral and written, to minority, women, and community organizations; to schools with minority and women students; and to minority and women recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
- (j) Encourage present minority and women employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and women youth, both on the site and in other areas of a Contractor's work force.
- (k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3. (This requirement applies only to Federal and federally assisted projects.)
- (l) Conduct, at least annually, an inventory and evaluation at least of all minority and women personnel for promotional opportunities; and encourage these employees to seek or to prepare for, through appropriate training, such opportunities. (This is Item 4(k) in Minnesota Rules.)
- (m) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the equal employment opportunity policy and the Contractor's obligations under these specifications are being carried out. (This is item 4(l) in Minnesota Rules.)

**STANDARD FEDERAL AND STATE EEO CONSTRUCTION  
CONTRACT SPECIFICATIONS (*con't*)**

- (n) Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes. (This is item 4(m) in Minnesota Rules.)
  - (o) Document and maintain a record of all solicitations or offers for subcontracts from minority and women construction contractors and suppliers, including circulation of solicitations to minority and women contractor associations and other business associations. (This is item 4(n) in Minnesota Rules.)
  - (p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment opportunity policies and affirmative action obligations. (This is item 4(o) in Minnesota Rules.)
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7(a) to (p) for Federal or federally assisted projects, and 4(a)-(o) for State or state assisted projects). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7(a) to (p) or 4(a) to (o) of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and women work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor however, is required to provide equal employment opportunity and to take affirmative action for all minority groups both male and female, and all women both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order for Federal or federally assisted projects, or Minnesota Rules for State or state assisted projects, if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order or Minnesota Rules part 5000.3520 if a specific minority group is under-utilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, creed, religion, sex, or national origin. Minnesota Statutes §363A.36, part 5000.3535 (Subp. 7) also prohibits discrimination with regard to marital status, status with regard to public assistance, disability, age, or sexual orientation.

**STANDARD FEDERAL AND STATE EEO CONSTRUCTION  
CONTRACT SPECIFICATIONS (*con't*)**

11. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts under the federal Executive Order 11246 or a local human rights ordinance, or whose certificate of compliance has been suspended or revoked pursuant to Minnesota Statutes, Section §363A.36.
12. The Contractor shall carry out such sanctions for violation of these specifications and of the equal opportunity clause, including suspension, termination, and cancellation of existing contracts as may be imposed or ordered pursuant to Minnesota Statutes, Section §363A.36, and its implementing rules for State or state assisted projects, or Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs for Federal or federally assisted projects. Any contractor who fails to carry out such sanctions shall be in violation of these specifications and Minnesota Statutes, Section §363A.36, or Executive Order 11246 as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications (paragraph 4 in Minnesota Rules 5000.3535), so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of these Specifications or Minnesota Statutes, Section §363A.36 and its implementing rules, or Executive Order 11246 and its regulations, the commissioner or the director shall proceed in accordance with Minnesota Rules part 5000.3570 for State or state assisted projects, or 41 CFR 60-4.8 for Federal or federally assisted projects.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company equal employment opportunity policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Minnesota Department of Human Rights or the Government, and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (for example, mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing provided in this part shall be construed as a limitation upon the application of other state or federal laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

## **EQUAL OPPORTUNITY CLAUSE** **(41 CFR Part 60-1.4 b, 7-1-96 Edition)**

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and, selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the State Highway Agency (SHA) setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246, Equal Employment Opportunity, dated September 24, 1965, and of the rules, regulations (41 CFR Part 60), and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 and by rules, regulations, and orders of the Secretary of Labor, pursuant thereto, and will permit access to its books, records, and accounts by the Federal Highway Administration (FHWA) and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract, or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraph (1) through (7) in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor, unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246. The Contractor will take such action with respect to any subcontract or purchase order as the Secretary of Labor, SHA, or the Federal Highway Administration (FHWA) may direct as a means of enforcing such provisions, including sanctions for noncompliance. In the event a contractor becomes a party to litigation by a subcontractor or vendor as a result of such direction, the contractor may request the SHA to enter into such litigation to protect the interest of the State. In addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

## Minority and Women Employment Goals

County	Federal Goals		State Goals	
	Minority Goal	Women Goal	Minority Goal	Women Goal
Aitkin	2.2%	6.9%	5%	6%
Anoka	2.9%	6.9%	11%	6%
Becker	0.7%	6.9%	6%	6%
Beltrami	2.0%	6.9%	6%	6%
Benton	0.5%	6.9%	3%	6%
Big Stone	2.2%	6.9%	4%	6%
Blue Earth	2.2%	6.9%	4%	6%
Brown	2.2%	6.9%	4%	6%
Carlton	1.2%	6.9%	5%	6%
Carver	2.9%	6.9%	11%	6%
Cass	2.2%	6.9%	6%	6%
Chippewa	2.2%	6.9%	4%	6%
Chisago	2.9%	6.9%	3%	6%
Clay	0.7%	6.9%	6%	6%
Clearwater	2.0%	6.9%	6%	6%
Cook	1.2%	6.9%	5%	6%
Cottonwood	0.8%	6.9%	4%	6%
Crow Wing	2.2%	6.9%	6%	6%
Dakota	2.9%	6.9%	11%	6%
Dodge	0.9%	6.9%	4%	6%
Douglas	2.2%	6.9%	6%	6%
Faribault	2.2%	6.9%	4%	6%
Fillmore	0.9%	6.9%	4%	6%
Freeborn	0.9%	6.9%	4%	6%
Goodhue	2.2%	6.9%	4%	6%
Grant	2.2%	6.9%	6%	6%
Hennepin	2.9%	6.9%	11%	6%
Houston	0.6%	6.9%	4%	6%
Hubbard	2.0%	6.9%	6%	6%
Isanti	2.2%	6.9%	3%	6%
Itasca	1.2%	6.9%	5%	6%
Jackson	0.8%	6.9%	4%	6%
Kanabec	2.2%	6.9%	3%	6%
Kandiyohi	2.2%	6.9%	3%	6%
Kittson	2.0%	6.9%	6%	6%
Koochiching	1.2%	6.9%	5%	6%
Lac Qui Parle	2.2%	6.9%	4%	6%
Lake	1.2%	6.9%	5%	6%
Lake of the Woods	2.0%	6.9%	6%	6%
Le Sueur	2.2%	6.9%	4%	6%
Lincoln	0.8%	6.9%	4%	6%
Lyon	0.8%	6.9%	4%	6%



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County	Federal Goals		State Goals	
	Minority Goal	Women Goal	Minority Goal	Women Goal
Mahnomen	2.0%	6.9%	6%	6%
Marshall	2.0%	6.9%	6%	6%
Martin	2.2%	6.9%	4%	6%
McLeod	2.2%	6.9%	3%	6%
Meeker	2.2%	6.9%	3%	6%
Mille Lacs	2.2%	6.9%	3%	6%
Morrison	2.2%	6.9%	6%	6%
Mower	0.9%	6.9%	4%	6%
Murray	0.8%	6.9%	4%	6%
Nicollet	2.2%	6.9%	4%	6%
Nobles	0.8%	6.9%	4%	6%
Norman	2.0%	6.9%	6%	6%
Olmsted	1.4%	6.9%	4%	6%
Otter Tail	2.2%	6.9%	6%	6%
Pennington	2.0%	6.9%	6%	6%
Pine	2.2%	6.9%	3%	6%
Pipestone	0.8%	6.9%	4%	6%
Polk	1.2%	6.9%	6%	6%
Pope	2.2%	6.9%	6%	6%
Ramsey	2.9%	6.9%	11%	6%
Red Lake	2.0%	6.9%	6%	6%
Redwood	0.8%	6.9%	4%	6%
Renville	2.2%	6.9%	3%	6%
Rice	2.2%	6.9%	4%	6%
Rock	0.8%	6.9%	4%	6%
Roseau	2.0%	6.9%	6%	6%
Scott	2.9%	6.9%	11%	6%
Sherburne	0.5%	6.9%	3%	6%
Sibley	2.2%	6.9%	4%	6%
St. Louis	1.0%	6.9%	5%	6%
Stearns	0.5%	6.9%	3%	6%
Steele	0.9%	6.9%	4%	6%
Stevens	2.2%	6.9%	6%	6%
Swift	2.2%	6.9%	4%	6%
Todd	2.2%	6.9%	6%	6%
Traverse	2.2%	6.9%	6%	6%
Wabasha	0.9%	6.9%	4%	6%
Wadena	2.2%	6.9%	6%	6%
Waseca	2.2%	6.9%	4%	6%
Washington	2.9%	6.9%	11%	6%
Watonwan	2.2%	6.9%	4%	6%
Wilkin	0.7%	6.9%	6%	6%
Winona	0.6%	6.9%	4%	6%
Wright	2.9%	6.9%	3%	6%
Yellow Medicine	2.2%	6.9%	4%	6%

<b>Minnesota Department of Transportation</b> Office of Civil Rights Contractor Employment Data			<b>1. Contractor Name and Address:</b>  <b>Phone:</b> _____				
<b>2. Employment Data</b> a) Name: Last Name, First Name, MI		b) Social Security #	c) New Hire (Y or N)	d) Ethnicity	e) Gender (M or F)	f) Trade/Foreman, Supervisors, Managers	g) Level (A, J, or T)
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## **INSTRUCTIONS FOR EEO-12 CONTRACTOR EMPLOYMENT DATA**

**This form should be submitted at the Pre-Con to the Project Engineer prior to the start of your first Mn/DOT construction project for the calendar year. (Prime and Subs)**

1. Contractor Name and Address self-explanatory.
2. Employment Data information will coincide with your employment records.
  - 2a. Name should be listed First Name, Middle Initial, and Last Name. This will enable Mn/DOT EEO staff to readily identify individuals on all projects.
  - 2b. Social Security Number self-explanatory.
  - 2c. New Hire is to be indicated with a "Y" for Yes or an "N" for No. "New Hire" is an employee who has not worked for you in any capacity or on any other project within the current calendar year.
  - 2d. Ethnicity can be indicated by Black (B), Hispanic (H), American Indian/Alaskan Native (AI), Asian/Pacific Islander (AP), or White (W).
  - 2e. Gender is to be indicated with an "M" for Males or an "F" for Females.
  - 2f. Trade/Foreman, Supervisors, Managers self-explanatory. List trade that applies unless the employee fits one of the other three categories.
  - 2g. Level "A" is for an Apprentice, "J" is for a Journey Worker, and "T" is for a Mn/DOT approved Trainee.

If you have questions about filling out this form, contact the Office of Civil Rights at (651) 366-3073.  
(Please make copies as you need them.)

**This information can be submitted electronically via the web, through Mn/DOT's Work force Information Tracking Initiative (WITI) Program. To open a free account to gain access to WITI or to find out more about this possibility please contact Mn/DOT's Office of Civil Rights at (651) 366-3321.**

Minnesota Department of Transportation  
Office of Civil Rights

Special Provisions  
105/10[illegible]

## **NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

*"Whoever being an officer, agent, or employee of the United States, of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or  
Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;  
Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."*

## **X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

- 1.** That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
- 2.** That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed there under.
- 3.** That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of

Violating Facilities.

- 4.** That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

## **XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

### **1. Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts -49 CFR 29)

- a.** By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
- b.** The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c.** The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
- d.** The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- e.** The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- f.** The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

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OFFICE OF CIVIL RIGHTS  
**REQUIRED CONTRACT PROVISIONS (con't)**

EEO Special Provisions  
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g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\* \* \* \* \*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

- a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft,

forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

- c. Are not presently indicted for or otherwise criminally or

civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

- d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**2. Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department of agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

**REQUIRED CONTRACT PROVISIONS (con't)**

g. A participation in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

\* \* \* \* \*

#### **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

#### **XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or

**APPENDIX A (Long Version)**  
**REQUIRED CONTRACT PROVISIONS**  
**FEDERAL-AID CONSTRUCTION CONTRACTS**

The required Contract Provisions for Federal-aid construction contracts, Form FHWA-1273 (Rev. 4-93) is restated here for emphasis:

Section IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

Section IV.2, Classification

2. Classification

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers as defined in Section IV.4(c), when such a classification prevails in the area in which the work is performed.

**For implementation reference Section IV.2(c), (d) and (e).**

The Required Contract Provisions for Federal-aid construction contracts, Form FHWA-1273 (Rev. 4-93) is amended as set forth:

Section V. STATEMENTS AND PAYROLLS

In part c of Section V.2, Payrolls and Payroll Records, the term “furnish” in this context will be accomplished by the subcontractors, on the project, sending their certified payroll reports to the government’s prime contractor. The prime contractor will then be required to send copies of both the subcontractor’s and their own certification forms, Mn/DOT 21658A form, to the project engineer. The prime contractor will maintain at a readily accessible location acceptable to Mn/DOT all the payrolls (both theirs and the subcontractors) during the course of the work and for a period of three years from the date of the completion of the contract.

**Mn/DOT, as the contracting agency, will stand, upon demand, require the prime contractor to send to the project engineer copies of any or all contractor’s certified payrolls from any given project.**



# SCHEDULE OF PRICES

## NOTICE TO BIDDERS

Particular note should be made in regard to the clarity of numerals (figures) and to the procedure for alterations and the required certificate as directed by Section 1301.

The following abbreviations may be used in item description and unit of measure in the Schedule of Prices.

A	Arch	JA	Jacked
A-S	Antiscepage	LIN FT	Linear Feet
AB	Asbestos Bonded	LG	Long
ACT	Actuated	MAINT	Maintenance
AGG	Aggregate	MATL	Material
ALUM	Aluminum	MGM	1000 Board Feet
ASB	Asbestos	MET	Metal
ASPH	Asphaltic	MOD	Modification
ASSY	Assemblies	MPA	Metal Pipe Arch
B+B	Balled & Burlapped	MTD	Mounted
BC	Bituminous Coated	NON MET	Non Metallic
BIT	Bituminous	NON PERF	Non-Perforated
BLDG	Building	NON REINF	Non-Reinforced
BR	Bridge	OH	Overhead
CAL	Caliper	P-A	Pipe-Arch
CB	Catch Basin	PAVT	Pavement
CEM	Cement	PERF	Perforated
C and G	Curb and Gutter	PL	Plate
CI	Cast Iron	PNEUM	Pneumatic
C-I-P	Cast-in-Place	PREC	Precast
CL	Class	PREST	Prestressed
COMM	Commercial	PVC	Poly Vinyl Chloride
CONC	Concrete	RCPA	Reinforced Concrete Pipe Arch
COND	Conductor	REINF	Reinforced
CONN	Connection	RELO	Relocation
CONST	Construct	RESTOR	Restoration
CONT	Continuously	RMC	Rigid Metallic Conduit
CP	Cattle Pass	RNMC	Rigid Non Metallic Conduit
CTD	Coated	RDWY	Roadway
CU FT	Cubic Feet	S-G	Sand & Gravel
CU YD	Cubic Yard	SIG	Signal
CULV	Culvert	SPE	Special
CWT	Hundred Weight	SQ FT	Square Feet
DES	Design	SQ YD	Square Yard
DBL	Double	STA	Station
DI	Drop Inlet	STD	Standard
DIAM	Diameter	STL	Steel
DRWY	Driveway	STKPL	Stockpile
EXC	Excavation	STR	Strength
EXP	Expansion	STRUCT	Structural
FAB	Fabric	SPPA	Structural Plate Pipe Arch
FE	Fence	SYS	System
FERT	Fertilizer	T	Traffic
F+I	Furnish & Install	TBR	Timber
FOUND	Foundation	TEMP	Temporary
FT LG	Feet Long	THERMO	Thermoplastic
FURN	Furnish	TRTD	Treated
GA	Gauge	UNDERGRD	Underground
GRAN	Granular	UNTRTD	Untreated
HI	High	VAR	Variable
INP	In Place	VM	Vehicular Measure
INST	Install	WEAR	Wearing



## INSURANCE

The contractor shall not commence work under this contract until he has obtained the following insurance, and such insurance has been approved by the Blue Earth County Attorney.

The Contractor shall deposit with the County Auditor the original, or a certified duplicate copy thereof as applicable to this project, of the Public Liability and Property Damage Insurance and Extended Coverage Policies, required hereunder. The Contractor shall furnish the County with a certificate of insurance from the insurance company issuing the policies as is herein required. All policies shall remain in force and effect on thirty days written notice to the County Auditor before cancellation. The above insurance policies shall be submitted at the same time as the contract and bond as provided in Minn. Statutes 1306.

The Contractor shall procure and maintain during the life of the Contract and until the Contract has been fully accepted, insurance policies as follows:

(A) PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: For and on behalf of himself, the County of Blue Earth as joint assureds, and with a cross- liability endorsement protection of the County of Blue Earth from claims or damages for personal injuries, including accidental death, as well as for claims for property damage which may arise by the Contractor or by a subcontractor or by anyone directly or indirectly employed by either of them.

Said Public Liability and Public Property Damage Insurance Policy shall provide that the insurance company waives the right to assert the immunity of the County as a defense to any claims made under said insurance.

The amount of such insurance will be as follows: Public Liability Insurance in an amount of not less than One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries to, or death of one person and subject to the same limit for each person in a total amount of not less than One Million Dollars (\$1,000,000.00) on account of one accident, and property damage insurance in an amount not less than One Million Dollars (\$1,000,000.00) for all damages to or destruction of property in any one accident and subject to that limit, a total limit of One Million Dollars (\$1,000,000.00) for all damages to or destruction of property during the policy period.

(B) WORKER'S COMPENSATION INSURANCE: For all his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the subcontractor to provide Worker's Compensation Insurance for all his employees.

(C) AUTOMOBILE PUBLIC LIABILITY INSURANCE: One Million Dollars (\$1,000,000.00) for all damages arising out of bodily injuries to, or death of one person, and subject to that limit for each person, a total of One Million Dollars (\$1,000,000.00) for all damages to or destruction of property in any one accident and subject to that limit, a total of One

Million Dollars (\$1,000,000.00) for all damages to or destruction of property during the policy period, if any motor vehicles are engaged in operations within the term of the contract on the site of work covering the use of all such motor vehicles unless such coverage is included in the insurance provided for under subsection "A" hereof.

### (1714) RESPONSIBILITY FOR DAMAGE CLAIMS

The first paragraph of 1714 is revised to read as follows:

The Contractor shall indemnify and save harmless the State of Minnesota, the County of Blue Earth, their officers and employees from all suits, actions, and claims of any character brought because of injuries or damages received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims arising or amounts recovered from infringements of patent, trademark, or copyright; or because of any claims arising or amounts recovered under the Worker's Compensation Act; or under any other law, ordinance, order or decree.

AFFIDAVIT OF NON-COLLISION

BIDDER \_\_\_\_\_

ADDRESS \_\_\_\_\_

I hereby swear (or affirm) under the penalty of perjury:

(1) That I am the bidder, (if the bidder is an individual), a partner in the bidder, (if the bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the bidder is a corporation);

(2) That the attached bid or bids have been arrived at by the bidder independently, and have been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other vendor of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or competition;

(3) That the contents of the bid or bids have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder or its surety on any bond furnished with the bid or bids, and will not be communicated to any such person prior to the official opening of the bid or bids;

(4) That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed \_\_\_\_\_

Firm Name \_\_\_\_\_

Subscribed and sworn to before me

this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

Notary Public

My Commission Expires \_\_\_\_\_

PROOF OF WORKER'S COMPENSATION INSURANCE COVERAGE

Minnesota Statute Section 176.182 requires every state and local licensing agency to withhold the issuance or renewal of a license or permit to operate a business in Minnesota until the applicant presents acceptable evidence of compliance with the workers' compensation insurance coverage requirement of Section 176.181, Subd. 2. The information required is: The name of the insurance company, the policy number, and dates of coverage or the permit to self-insure. This information will be collected by the licensing agency and put in their company file. It will be furnished , upon request, to the Department of Labor and Industry to check for compliance with Minnesota Statute Sec. 176.181, Subd. 2.

This information is required by law, and licenses and permits to operate a business may not be issued or renewed if it is not provided and/or is falsely reported. Furthermore, if this information is not provided and/or falsely reported, it may result in a \$1,000 penalty assessed against the applicant by the Commissioner of the Department of Labor and Industry payable to the Special Compensation Fund.

Provide the information specified above in the spaces provided, or certify the precise reason your business is excluded from compliance with the insurance coverage requirement for workers' compensation.

Insurance Company Name \_\_\_\_\_  
(NOT the insurance agent)

Policy Number or Self-insurance Permit Number: \_\_\_\_\_

Dates of Coverage: \_\_\_\_\_

(or)

I am not required to have worker's compensation liability coverage because:

( ) I have no employees covered by the law.

( ) Other (Specify) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I HAVE READ AND UNDERSTAND MY RIGHTS AND OBLIGATIONS WITH REGARDS TO BUSINESS LICENSES, PERMITS, AND WORKER'S COMPENSATION COVERAGE, AND I CERTIFY THAT THE INFORMATION PROVIDED IS TRUE AND CORRECT.

\_\_\_\_\_  
(SIGNATURE)



## NON-COLLUSION AFFIDAVIT

The following Non-Collusion Affidavit shall be executed by the bidder:

**State Project No.** \_\_\_\_\_

**Federal Project No.** \_\_\_\_\_

**State of Minnesota** \_\_\_\_\_ )

) ss

**County of** \_\_\_\_\_ )

I, \_\_\_\_\_, do state under penalty of  
(name of person signing this affidavit)

perjury under 28 U.S.C. 1746 of the laws of the United States:

(1) that I am the authorized representative of \_\_\_\_\_

\_\_\_\_\_  
(name of person, partnership or corporation submitting this proposal)

and that I have the authority to make this affidavit for and on behalf of said bidder;

(2) that, in connection with this proposal, the said bidder has not either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding;

(3) that, to the best of my knowledge and belief, the contents of this proposal have not been communicated by the bidder or by any of his/her employees or agents to any person who is not an employee or agent of the bidder or of the surety on any bond furnished with the proposal and will not be communicated to any person who is not an employee or agent of the bidder or of said surety prior to the official opening of the proposal, and

(4) that I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed: \_\_\_\_\_  
(bidder or his authorized representative)





3/14/2011

Contract No.: 115060

Blue Earth  
Schedule Of Prices By Contract Projects

Project Number: 8140, SAP 007-606-013, SAP 007-614-010, SAP 007-617-015

Project Title or Road Number: Contract No.: 115060 - 8140 - COUNTY ROAD 114 (CSAH 9 TO TH 60), SAP 007-606-013 - CSAH 6 (CSAH 22 TO TH 68), SAP 007-614-010 - CSAH 14 (S. CO. LINE TO TH 30), SAP 007-617-015 - CSAH 17 (CSAH 27 TO TH 60)

Work Type: 8140 - Bituminous Overlays; SAP 007-606-013 - Bituminous Overlays; SAP 007-614-010 - Bituminous Overlays; SAP 007-617-015 - Bituminous Overlays

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.

Item No.	Description	Units	Quantity	Unit Price	Total Price
<b>Project 8140</b>					
2118.501	AGGREGATE SURFACING CLASS 2 MODIFIED	TON	180.00		
2221.501	AGGREGATE SHOULDERING CLASS 1 MOD	TON	880.00		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2,194.00		
2360.609	BITUMINOUS MATERIAL FOR MIXTURE (PG58-28)	TON	218.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL INTERMEDIATE)	TON	1,060.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL FINE)	TON	706.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A COARSE)	TON	1,060.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A FINE)	TON	706.00		
2360.609	BITUMINOUS (PRODUCE, HAUL, & LAY)	TON	3,749.00		
2580.501	TEMPORARY LANE MARKING	LIN FT	1,149.00		
8140 Project Total					



3/14/2011

Contract No.: 115060

Blue Earth  
Schedule Of Prices By Contract Projects

Project Number: 8140, SAP 007-606-013, SAP 007-614-010, SAP 007-617-015

Project Title or Road Number: Contract No.: 115060 - 8140 - COUNTY ROAD 114 (CSAH 9 TO TH 60), SAP 007-606-013 - CSAH 6 (CSAH 22 TO TH 68), SAP 007-614-010 - CSAH 14 (S. CO. LINE TO TH 30), SAP 007-617-015 - CSAH 17 (CSAH 27 TO TH 60)

Work Type: 8140 - Bituminous Overlays; SAP 007-606-013 - Bituminous Overlays; SAP 007-614-010 - Bituminous Overlays; SAP 007-617-015 - Bituminous Overlays

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.

Item No.	Description	Units	Quantity	Unit Price	Total Price
<b>Project SAP 007-606-013</b>					
2118.501	AGGREGATE SURFACING CLASS 2 MODIFIED	TON	147.00		
2221.501	AGGREGATE SHOULDERING CLASS 1 MOD	TON	4,780.00		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	4,058.00		
2360.609	BITUMINOUS MATERIAL FOR MIXTURE (PG58-28)	TON	643.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL INTERMEDIATE)	TON	3,131.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL FINE)	TON	2,087.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A COARSE)	TON	3,131.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A FINE)	TON	2,087.00		
2360.609	BITUMINOUS (PRODUCE, HAUL, & LAY)	TON	11,077.00		
2580.501	TEMPORARY LANE MARKING	LIN FT	2,559.00		
SAP 007-606-013 Project Total					



3/14/2011

Contract No.: 115060

Blue Earth  
Schedule Of Prices By Contract Projects

Project Number: 8140, SAP 007-606-013, SAP 007-614-010, SAP 007-617-015

Project Title or Road Number: Contract No.: 115060 - 8140 - COUNTY ROAD 114 (CSAH 9 TO TH 60), SAP 007-606-013 - CSAH 6 (CSAH 22 TO TH 68), SAP 007-614-010 - CSAH 14 (S. CO. LINE TO TH 30), SAP 007-617-015 - CSAH 17 (CSAH 27 TO TH 60)

Work Type: 8140 - Bituminous Overlays; SAP 007-606-013 - Bituminous Overlays; SAP 007-614-010 - Bituminous Overlays; SAP 007-617-015 - Bituminous Overlays

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.

Item No.	Description	Units	Quantity	Unit Price	Total Price
<b>Project SAP 007-614-010</b>					
2118.501	AGGREGATE SURFACING CLASS 2 MODIFIED	TON	119.00		
2221.501	AGGREGATE SHOULDERING CLASS 1 MOD	TON	1,120.00		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2,329.00		
2360.609	BITUMINOUS MATERIAL FOR MIXTURE (PG58-28)	TON	322.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL INTERMEDIATE)	TON	1,567.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL FINE)	TON	1,045.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A COARSE)	TON	1,567.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A FINE)	TON	1,045.00		
2360.609	BITUMINOUS (PRODUCE, HAUL, & LAY)	TON	5,545.00		
2580.501	TEMPORARY LANE MARKING	LIN FT	1,437.00		
SAP 007-614-010 Project Total					



3/14/2011

Contract No.: 115060

Blue Earth  
Schedule Of Prices By Contract Projects

Project Number: 8140, SAP 007-606-013, SAP 007-614-010, SAP 007-617-015

Project Title or Road Number: Contract No.: 115060 - 8140 - COUNTY ROAD 114 (CSAH 9 TO TH 60), SAP 007-606-013 - CSAH 6 (CSAH 22 TO TH 68), SAP 007-614-010 - CSAH 14 (S. CO. LINE TO TH 30), SAP 007-617-015 - CSAH 17 (CSAH 27 TO TH 60)

Work Type: 8140 - Bituminous Overlays; SAP 007-606-013 - Bituminous Overlays; SAP 007-614-010 - Bituminous Overlays; SAP 007-617-015 - Bituminous Overlays

**BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.**

Item No.	Description	Units	Quantity	Unit Price	Total Price
<b>Project SAP 007-617-015</b>					
2118.501	AGGREGATE SURFACING CLASS 2 MODIFIED	TON	98.00		
2221.501	AGGREGATE SHOULDERING CLASS 1 MOD	TON	1,340.00		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1,452.00		
2360.609	BITUMINOUS MATERIAL FOR MIXTURE (PG58-28)	TON	268.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL INTERMEDIATE)	TON	1,307.00		
2360.609	BITUMINOUS AGGREGATE (GRAVEL FINE)	TON	871.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A COARSE)	TON	1,307.00		
2360.609	BITUMINOUS AGGREGATE (CLASS A FINE)	TON	871.00		
2360.609	BITUMINOUS (PRODUCE, HAUL, & LAY)	TON	4,624.00		
2580.501	TEMPORARY LANE MARKING	LIN FT	833.00		
SAP 007-617-015 Project Total					
Grand Total					

Bidder Name:

Bidder Address:

Bidder Phone:

 Bidder  
Signature:

Date:





TOTALS

_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____
_____	\$ _____

In accordance with 1210 of the Specifications, receipt is acknowledged of Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_  
Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_ Addendum No. \_\_\_\_\_ Dated \_\_\_\_\_

Signed \_\_\_\_\_

Enclosed herewith find (certified check) (bidder's bond) in the amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

being at least 5% of the amount of the proposal, made payable to the County Treasurer of said county as a proposal guarantee which it is agreed by the undersigned will be forfeited in the event the Form of Contract and Bond is not executed, if awarded to the undersigned.

This Proposal dated the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

Signed: \_\_\_\_\_, P.O. Address \_\_\_\_\_, as an individual.

Signed: \_\_\_\_\_ for \_\_\_\_\_, a partnership.

Partners	{	Name _____	Address _____
	{	Name _____	Address _____
	{	Name _____	Address _____
	{	Name _____	Address _____

Signed: \_\_\_\_\_, for \_\_\_\_\_

a corporation, incorporated under the laws of the State of \_\_\_\_\_

_____	_____
Name of President	Business Address

Corporate Seal	_____	_____
	Name of Secretary	Business Address

_____	_____
Name of Treasurer	Business Address

Note: Signatures shall comply with 1206 of the Specifications.

